

---

# ***Human Resource and Skill Requirement Study for 21 Coastal Districts of India***

Prepared for:  
Sagarmala, Ministry of Shipping and  
National Skill Development  
Corporation

Maharashtra:  
Mumbai  
Raigad

Final report

# Contents

---

1. District Profile	3
<hr/>	
Raigad	3
1.1.1. Demographic Profile	3
1.1.2. Key Economic Drivers	9
1.1.3. Priority Sectors	9
1.1.4. About Port	9
1.1.5. Investments	10
1.1.6. Youth Aspiration	12
1.1.7. Training Infrastructure	18
<hr/>	
1.2. Mumbai	19
1.2.1. Demographic Profile	19
1.2.2. Key Economic Drivers	25
1.2.3. Priority Sectors	25
1.2.4. About Port	26
1.2.5. Investments	26
1.2.6. Youth Aspiration	28
1.2.7. Training Infrastructure	34
<hr/>	
2. Skill Gap Assessment, Job Roles and Emerging Job Roles	36
<hr/>	
2.1. Raigad	36
2.1.1. Incremental Demand for Skilled & Semi Skilled Manpower	36
2.1.2. Gap between Total Demand and Supply for Skilled workforce in Select Sectors	37
2.1.3. Job Roles High in Demand	38
<hr/>	
2.2. Mumbai	42
2.2.1. Incremental Demand for Skilled & Semi Skilled Manpower	42
2.2.2. Gap between Total Demand and Supply for Skilled workforce in Select Sectors	43
2.2.3. Job Roles High in Demand	44
<hr/>	
3. District Action Plan	48
<hr/>	
3.1. Background	48
3.2. Objective of developing the plan	48
3.3. Methodology	48
3.1. Summary for Raigad	49
3.2. Action Plan for Raigad	49
3.4. Summary for Mumbai	60



# 1. District Profile

## Raigad

### About Raigad

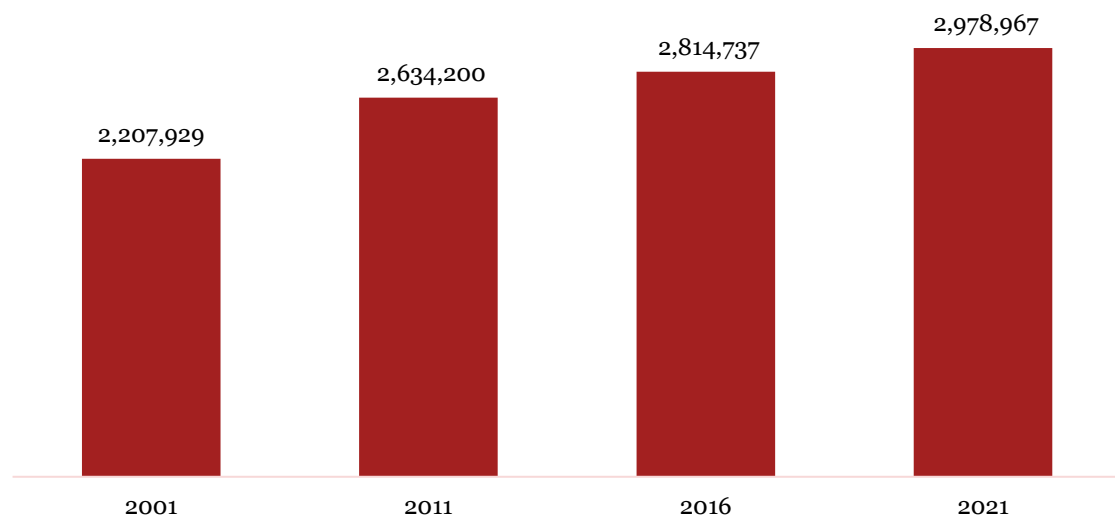
Large parts of the Raigad district lie in the extended Mumbai Metropolitan area, across the Thane Creek. The district houses one major port, Jawaharlal Nehru Port Trust (JNPT), and two prominent non-major ports, Dighi port and Dharamtar port. The major exportable items produced in the district are chemicals, steel, pharmaceuticals, rice and cashew nuts<sup>1</sup>. Industry (50%) and Service sector (44%) form the largest share in the overall district economy.

### 1.1.1. Demographic Profile<sup>2</sup>

Indicator	Value
Total population	2,634,200
Decadal rate of growth of population (2001-11)	19%
Rural population	63%
Female	49%
SC population	5%
ST population	12%
Workforce participation (As % of total population)	41%
Main Workers (As % of total population)	33%
Marginal (As % of total population)	8%
Non-workers (As % of total population)	59%
Number of people with vocational training in the age group of 15+ <sup>3</sup>	59 per 1,000

### Population trends<sup>4</sup>

Figure 1: Population trend in Raigad (2001-2021)



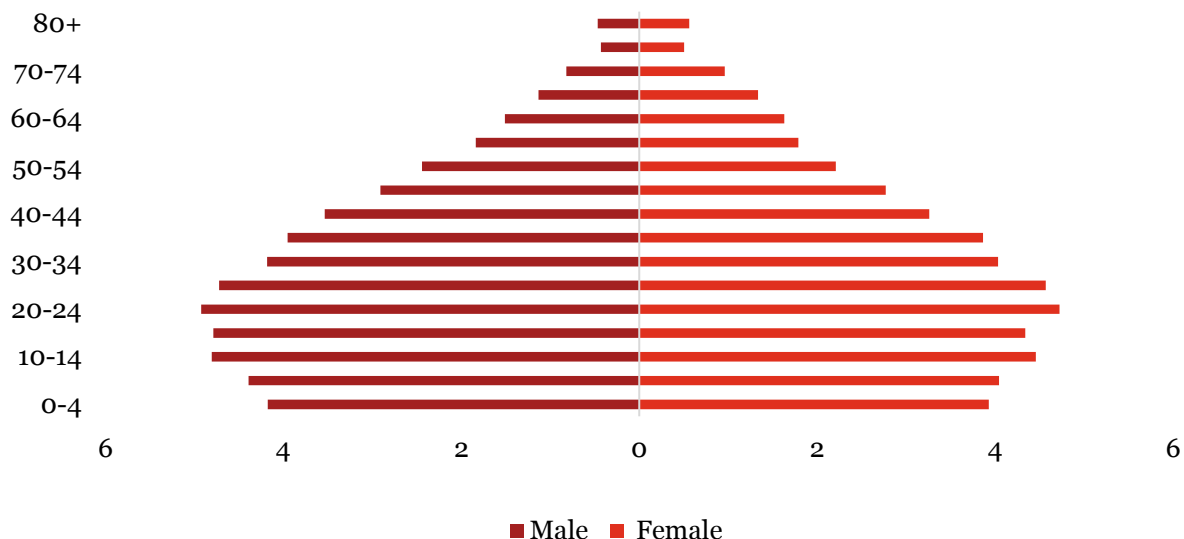
<sup>1</sup> Brief Industrial Profile of Raigad District, MSME

<sup>2</sup> Census 2011

<sup>3</sup> Employment and Unemployment Survey, District Level Estimates for Maharashtra, Labour Bureau, 2013-14

<sup>4</sup> (Census of India, 2001 and 2011), PwC Analysis

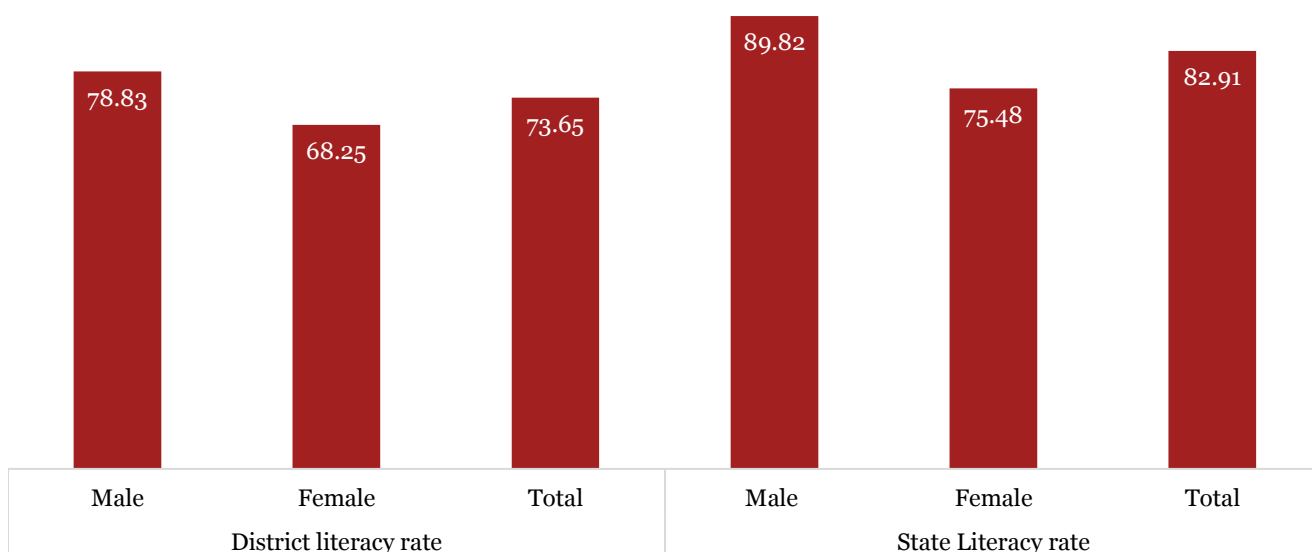
**Figure 2: Population pyramid Raigad - 2011**



The demographic dividend bulge in Raigad will remain intact for the coming next 10 years. Using proportional<sup>5</sup> method for estimating the population for the period 2011-21 (10 years), the population is estimated to be 2,814,737 and 2,978,967 in 2016 and 2021 respectively. The projected absolute growth in the population from 2016 to 2021 will be 6%.

*Literacy rates<sup>6</sup>*

**Figure 3: Raigad vs Maharashtra literacy rates (2011) – (in %)**



<sup>5</sup> The proportion of district and state population in 2011, and the estimated population of state in 2016 and 2021 that is reported in the population projections for India and state 2001-2026 estimates, are taken into account in estimating the district level population in 2016 and 2021.

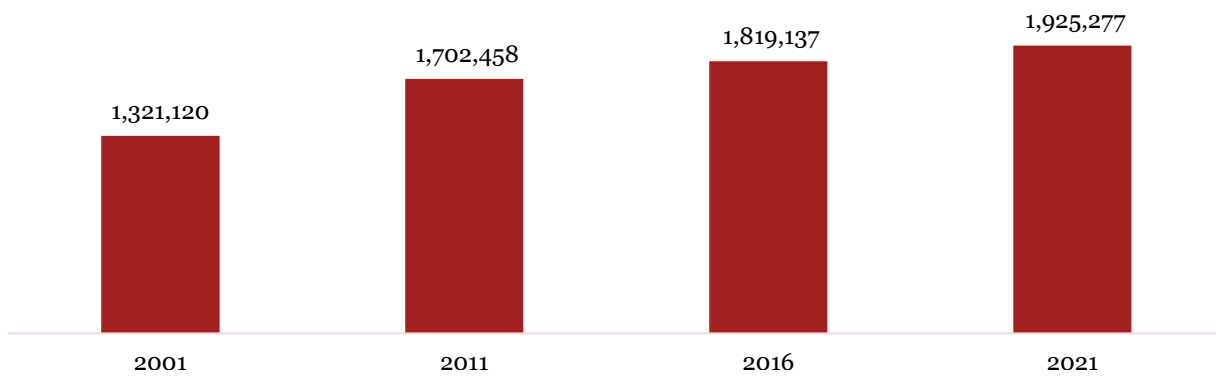
<sup>6</sup> (Census of India, 2011)

As per the Census 2011, the literacy rate of Raigad is 73.65%, which is far below the State's literacy rate of 82.91%. the female literacy rate (68.25%) of the district is also substantially lower than the male literacy rate (78.83%).

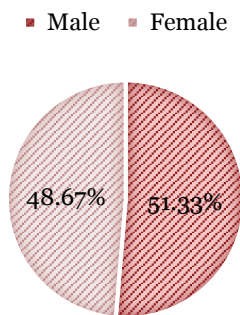
*Age specific population trends and education levels for 2011<sup>7</sup>*

As per the Census 2011, 492,873 people were in the age group of 15-24 years which constituted 18.71% of the total population. Using proportional method, the population in the age group of 15-59 years is estimated to be 1,819,137 and 1,925,277 in 2016 and 2021 respectively. The projected absolute growth in the population from 2016 to 2021 will be 6%.

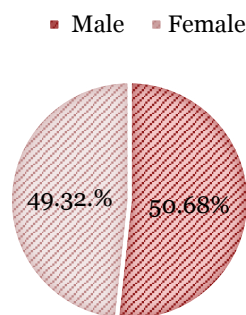
**Figure 4: Growth trend of population in the age group 15-59 years in Raigad (2001-2021)**



**Figure 5: Age specific population in Raigad (15-59 years)**



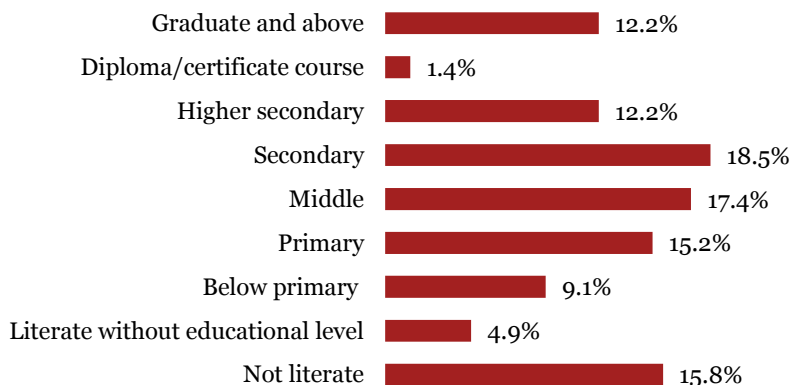
**Figure 6: Age specific population in Raigad (15-24 years)**



The share of population of males and females in total population of Raigad is around 50% each in both the 15-24 years and 15-59 years age group category. However the share of females in the 15-24 age category is lower than the 15-59 age category

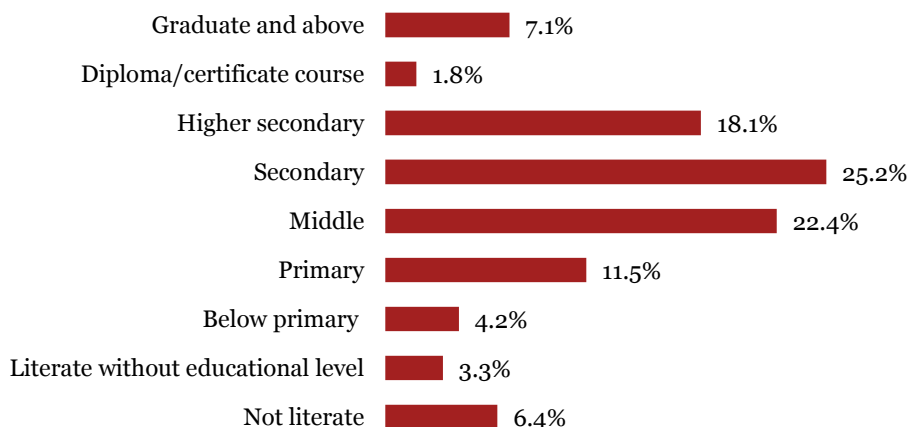
<sup>7</sup> Based on Census 2001 and 2011

**Figure 7: Age specific education level in Raigad (15-59 years)**



The census indicates that for the age category of 15-59 years, 15.8% of the population of Raigad is not literate, 4.9% of the population in the age category of 15-59 years is literate without any educational qualification, 9.1% have attended school till below primary level and 15.2% have completed schooling only up to primary level. Roughly, around 17.4% of the population in 15-59 years category have completed schooling up to the middle level, whereas around 18.5% of the population in 15-59 years category have been educated till secondary. Only 1.4% of the population of this district have done a certificate/diploma course and 12.2% have at least graduated, indicating that a graduate/post-graduate degree is more sought after than a certificate/diploma.

**Figure 8: Age specific education level in Raigad (15-24 years)**

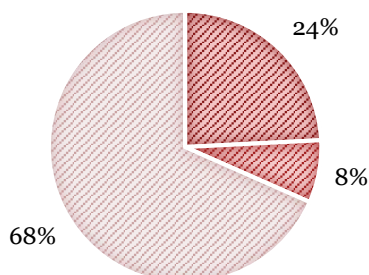


For the age category of 15-24 years, 6.4% of the population of Raigad is not literate, 3.3% are literate without any educational qualification, 4.2% have attended school till below primary level only and 11.5% have completed schooling only up to primary level. 22.4% of the population in 15-24 years category have done schooling up to the middle level, whereas, around 25.2% of the population in 15-24 years category have been educated till secondary. Only 1.8% of the population of this district have done a certificate/diploma course and 7.1% have at least completed graduation.

## Age specific distribution of workers and educational level

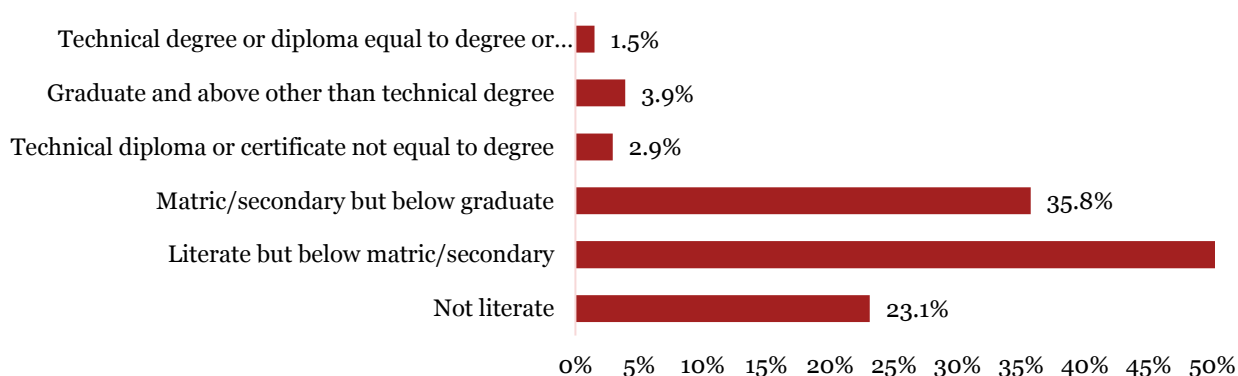
**Figure 9: Age specific distribution of workers in Raigad (15-24 years)**

■ Main workers ■ Marginal Workers ■ Non-workers



The total worker population ratio for this district, according to census 2011, is 41%. 68% of the population in the age group of 15-24 years are reported as non-workers. 24% of the population are main-workers, whereas 8% are engaged in marginal work.

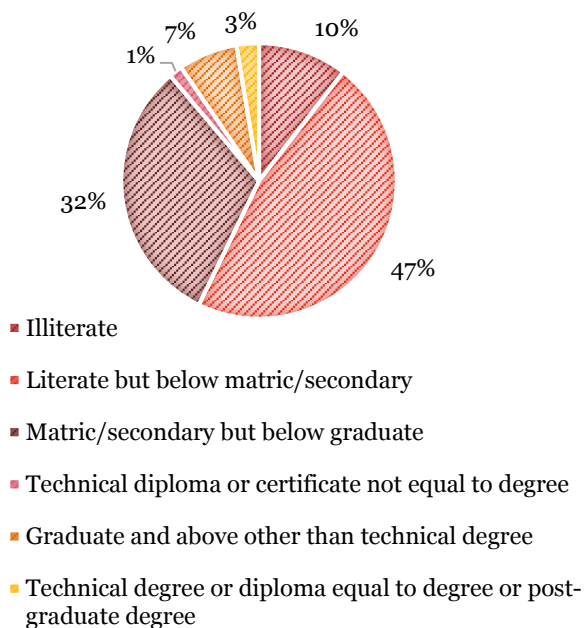
**Figure 10: Education level of marginal workers in Raigad (15-24 years)**



Amongst the 23,650 marginal workers in the age group of 15-24 years, 1.5% hold technical degree or a diploma equal to degree or post-graduate degree and 3.9% are graduate and above other than a technical degree 2.9% have a diploma or a certificate (not equal to degree. 35.8% are educated up to the matric/secondary level only and 58.3% are literate with an educational qualification of below matric/secondary level. 23.1% marginal workers in this age group are not literate.



**Figure 11: Education level for main workers in Raigad (15-24 years)**



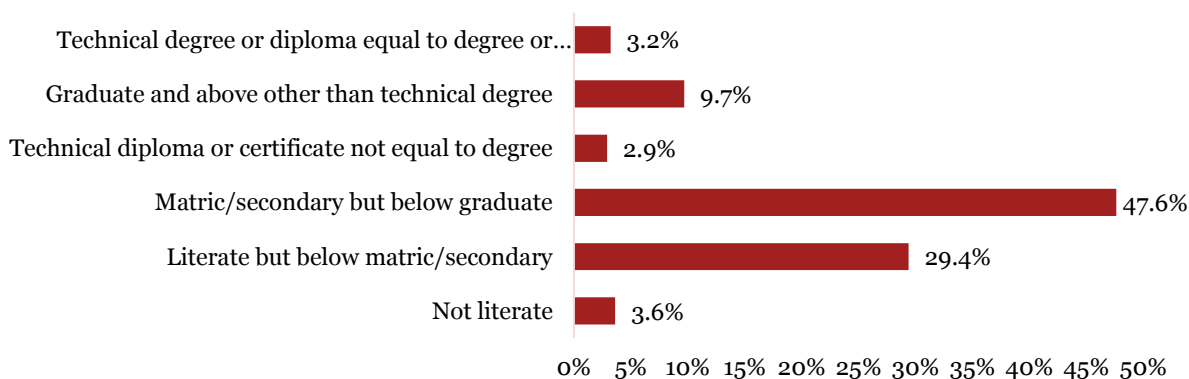
From the census depicted in the chart, the proportion of main workers who are illiterate (in the age category 15-24 years) is significantly less (23 percentage difference point between the two) than the proportion of marginal workers who are illiterate. We also find that the proportion of main workers who are literate but below matric/secondary (in the age category 15-24 years) is significantly more than (9 percentage difference point between the two) the proportion of marginal workers who are literate but below matric/secondary.

The proportion of main workers who are matric/secondary level but below graduate (in the age category 15-24 years) is significantly more than (9 percentage difference point between the two) the proportion of marginal workers who are matric/secondary level but below graduate.

The proportion of main workers who are graduate and above other than technical degree (in the age category 15-24 years) is slightly more than (4 percentage difference point between the two) the proportion of marginal workers who are graduate and above other than technical degree.

The proportion of main workers who have attained an technical degree or diploma equal to degree or post-graduate degree (in the age category 15-24 years) is slightly more than (1 percentage difference point between the two) the proportion of marginal workers and who have attained an technical degree or diploma equal to degree or post-graduate degree. For the remaining one educational level, we find that the population shares are more or less the same across the two worker categories.

**Figure 12: Education level of non-workers in Raigad (15-24 years)**

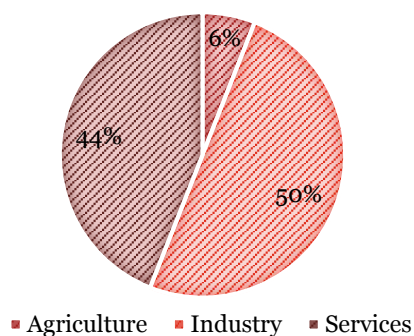


Amongst the 57,692 non-workers in the age group of 15-24 years, 3.22% hold a technical degree or a diploma equal to degree or post graduate degree and 9.69% have a graduate and above other than a technical degree. 2.91% have a diploma or a certificate (not equal to degree). Over 47.63% are educated up to the matric/secondary level but below graduate and 29.40% are literate but below matric/secondary level 3.61% marginal workers who are in this age group are not literate.

### 1.1.2. Key Economic Drivers

According to District Economy Survey, Raigad, the Gross Domestic Product of the district (at constant prices- 2004-05) was INR 24,019.28 Crores in 2012-13 and it has steadily grown at a CAGR of 9.5% over the period 2004-05 to 2012-13. The sectoral break up suggests that industry sector contribution to district GDP is nearly half (50%) followed by services sector (44%). Further disaggregation suggests that manufacturing sector has a share of 40% and hotels and restaurants have a share of 12% in the district GDP. Other sectors driving the district economy are banking and insurance (6.9%) and construction (6.1%). Banking and insurance in the district have witnessed an impressive growth of 182% over the years 2004-12.

**Figure 13: Sectoral breakup of Raigad district GDP at constant prices (2004-05)**



The key economic drivers of the district are illustrated below:

**Figure 14: Key Investments**



### 1.1.3. Priority Sectors

In Raigad, the priority sectors that have been identified are **Port and Maritime sector** and other sectors like **logistics, fisheries, tourism and construction**. In addition, **manufacturing and banking & finance** have also been identified as priority sectors from the point of view of their contribution to district GDP.

### 1.1.4. About Port

Ports & Maritime		
<b>Major Ports: 1</b>	<b>Minor Ports: 2</b>	<b>Shipyards: 0</b>
<b>Details</b>		
<b>Jawaharlal Nehru Port Trust</b>		

<i>Operations:</i>	Land Lord Port model (PPP)	<i>Capacity</i>	5.2 Mn TEUs PA	
<i>Key Cargo</i>	Coal, fertilizer, rice, sugar Alumina	<i>No of berths:</i>	10	
		<i>Draft</i>	14.5	
<i>Description and key Trend</i>	The Jawaharlal Nehru Port Trust (JNPT) at Navi Mumbai (formerly known as the Nhava Sheva Port) located within the Mumbai harbour on the west coast of India, was commissioned on 26th May 1989. It occupies a place of prominence among the major Indian ports. It is the second youngest and one of the most modern major ports of the country. Though it was initially planned to be a “satellite port” to the Mumbai Port with the purpose of decongesting traffic at the latter, eventually it was developed as an independent port on its own right and it became the country’s largest container port and also one of the fastest growing ports.			
<b>Terminal Operations</b>				
	<b>JNPTC</b>	<b>NSICT</b>	<b>GTICT</b>	<b>BPCL</b>
<i>Annual Capacity</i>	1.1 Mn TEUs	1.2 Mn TEUs	1.8 Mn TEUs	1.1 Mn tonnes
<i>Type of Cargo handled</i>	Containers	Containers	Containers	Petroleum products, crudes, and chemicals
<i>High Demand Job Roles</i>	Gate clerks, crane operators, and crane mechanics	Crane operators, crane mechanics, truck drivers	Crane operators, crane mechanics, truck drivers	Maintenance staff
<b>Other Minor Ports</b>				
	<b>Dighi</b>		<b>Dharamtar</b>	
<i>Terminal Operator</i>	Self-operated		Self-operated	
<i>Capacity</i>	15 Mn tons		8 MTPA	
<i>Cargo</i>	Bauxite, coal, H.B.O and steel coils		Iron ore, coal, limestone, dolomite, clinker	
<i>Job roles high in demand</i>	Gate clerks, crane operators, excavator, truck drivers, crane mechanics , fork lift operators, technicians		Crane operators, truck drivers	

### 1.1.5. Investments

The table below summarizes the investments that are in pipeline in the next few years:

**Table 1: Proposed Key Investments for the year 2016-22 in Raigad**

<b>Sector</b>	<b>Proposed Investment (INR Cr)</b>	<b>Number of Projects</b>	<b>Expected Employment</b>	<b>Key Players</b>
Port & Maritime	18,000	10	1.55 lakhs	JNPT, BMCT, Karanja Multipurpose Port, Rewas Port
Infrastructure	45,000	6	8.7 Lakhs	CIDCO
Smart City	2,033	61	-	CIDCO

Basic infrastructure, Transportation, Port City & Affordable Housing	34,777	88	-	CIDCO
Projects registered with DIC	1,110	33	3400	Metropolitan Exim Chem , Yashomala Farming & Tourism Pvt. Ltd.

In the port and maritime sector, upgradation and repair work in the existing JNPT port, development of port-based SEZ and initiation of shipyard projects have been identified as key focus areas for future investments. Details of proposed investments in this sector are given below:

**Table 2: Details of Investments in Port and Maritime sector in Raigad**

Project	Proposed Investment (INR cr)	Expected Employment	Key Players
Fourth terminal at JNPT will have the capacity to handle 4.8 mn TEUs per year and will become operational in two phases in 2017 and 2022	7,915	Over 1,200 persons	Bharat Mumbai Container Terminals
Multi-Product Port-based SEZ	4,000	1.5 lakh persons	JNPT
Repair of off shore platforms, ships, and cargo handling, with a facility of 500 m long jetty that take a load 25 ton sq. mtr proposed to be operational in 2016	250	1,400 persons when operational	Das Offshore
Repair of ships, and ship building yard that will spread across 100 acres of land to be operational in 2018.	50	400 persons during Construction Phase 1,000 persons during Operations phase	Bombay Marine Engineering Works
A shipyard project is proposed at Panvel creek; there will be one fitting off berth	21	Information Not available	Belapur Offshore Terminal
Waterfront for construction of ship repair and ship construction facility	21	70 persons	Rock and Reef
Multipurpose port at Chane village	1,000	Information Not available	Karanja Multipurpose Port
Maldar Shipyard project proposed at Ulwa Belapur which will include Slipway, Fitting out berth and dry dock	21	Information Not available	Maldar Shipyard
Multipurpose port which can handle containers, coal, cement, POL, and chemical cargo at Rewas Port	5,189	Information Not available	Reliance
Upgradation and expansion of old shipyard facility in Nagav creek at Kurul, taluka.	16.11	Information Not available	Konkan Barge Builders

In Raigad, within the MSME sectors, manufacturing, tourism, logistics, food processing are upcoming areas with proposed investments to the tune of INR 1,069 Cr, expected to create employment for approximately 3000 individuals. The details of proposed investments across these sectors are given below

**Figure 15: Details of proposed investments across different sectors, DIC Raigad**

Manufacturing	Tourism	Logistics	Food processing	Other proposed investments
<p>22 firms to be engaged in Chemical projects</p> <ul style="list-style-type: none"> <li>• Key player: Metropolitan Exim Chem Pvt. Ltd.</li> <li>• Investment: INR 473 cr</li> <li>• Employment: Direct- 1368</li> </ul> <p>4 firms to be engaged in steel and alloy manufacturing</p> <ul style="list-style-type: none"> <li>• Key Player: Latim Metals</li> <li>• Investment: INR 119 cr</li> <li>• Employment: Direct- 99</li> </ul>	<p>2 firms to be engaged in tourism projects</p> <ul style="list-style-type: none"> <li>• Key Player: Yashomala Farming &amp; Tourism Pvt. Ltd.</li> <li>• Investment: INR 275 cr.</li> <li>• Employment: Direct 580</li> </ul>	<p>Key Player: Caravan Logistics Pvt. Ltd</p> <ul style="list-style-type: none"> <li>• Investment: INR 50 cr</li> <li>• Employment: Direct-100</li> </ul>	<p>5 firms to be engaged</p> <ul style="list-style-type: none"> <li>• Key Player: Dhiraj Food Production Co.</li> <li>• Investment: INR 8 cr</li> <li>• Employment: Direct-68</li> </ul>	<p>15 Firms being engaged across multiple sectors such as power, paper, gems and jewellery, apparel software and cold storage</p> <ul style="list-style-type: none"> <li>• Investment: INR 38.5 cr</li> <li>• Employment: Direct 462</li> </ul>

### 1.1.6. Youth Aspiration

The key findings of the youth aspirations include youths' exposure to vocational training and educational aspirations, job aspirations, training aspirations and self-employment.

#### Respondent Profile

The table below provides an overview of the respondent profile:

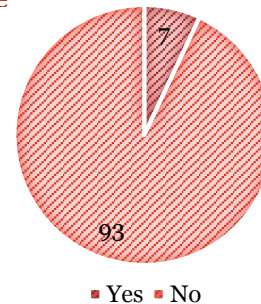
Profile	Details
Total Sample Size	384
Gender Profile	Male- 51% Female- 49%
Age Group	15-24 years
Education Level (top 3)	Senior Secondary schooling(Class 9 to 10)- 19.3% Higher secondary schooling with science (Class 11 to 12)- 17.7% Higher secondary schooling with commerce (Class 11 to 12)- 14.9%
APL/BPL/AAY/Don't know	APL-22 % BPL- 73% AAY- 5%
Occupational Profile (top 3)	Salary from employment (28.3%), Own business (14.6%), Agriculture (14.3%)

## Exposure to Vocational Training and Educational Aspiration

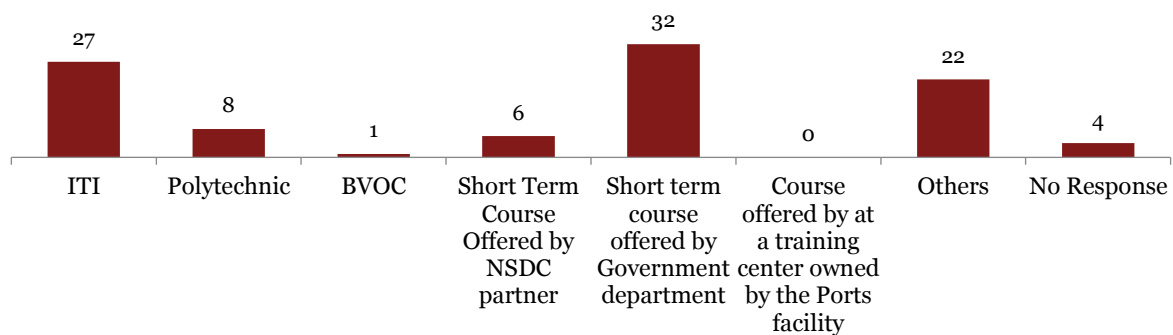
Regarding the exposure to the vocational training, most students reported that they had not completed any vocational training course. Overall, ~93% of the respondents had not enrolled in vocational training course (Figure 16).

Of the total respondents who underwent vocational training (which is ~7%), majority were from ITI (27%) and polytechnic (8%). Figure 17: Percentage of respondents completed courses in vocational training - Raigad exhibits the percentage of respondents who completed different types of courses as part of their vocational training.

**Figure 16: Percentage of respondents who completed vocational training course**

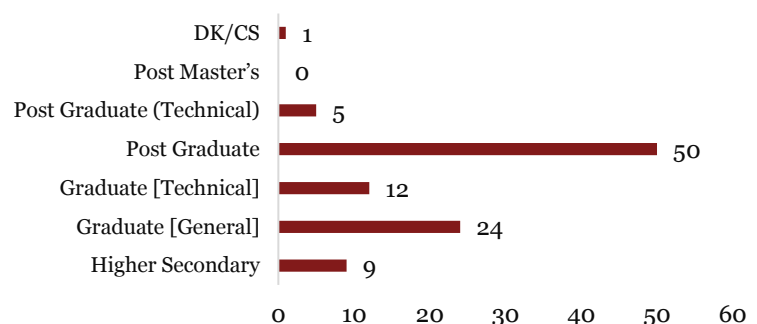


**Figure 17: Percentage of respondents completed courses in vocational training - Raigad**



Further, the respondents were asked about the level of education they wished to attain. Nearly three-fourth of the respondents (74%) aspired to attain graduation and post-graduation level of education. The desire to attain technical education is relatively low with only 17% aspiring for graduation or post-graduation in technical fields (Figure 18: Desired level of education).

**Figure 18: Desired level of education - Raigad**



## Job Aspiration

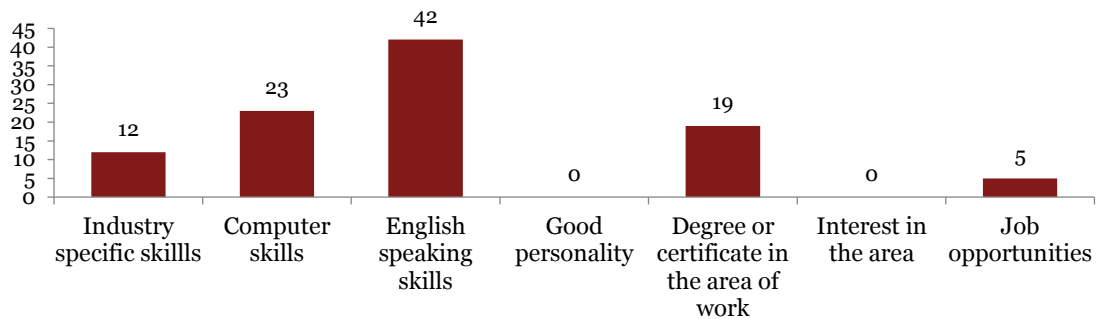
One of the important findings of the survey has been the high preference for wage employment over self-employment among the youth of the district. About 95% of the respondents reported to have preferred wage employment over self-employment (Figure 19: Percentage of respondents aspiring for wage and self-employment).

The respondents were further asked to identify the factors important for securing employment in the area of interest. 42% of the respondents identified English speaking skills as the most important factor for securing employment followed by computer skills (23%), degree or certificate in area of work (19%) and industry specific skills (12%) (Figure 20).

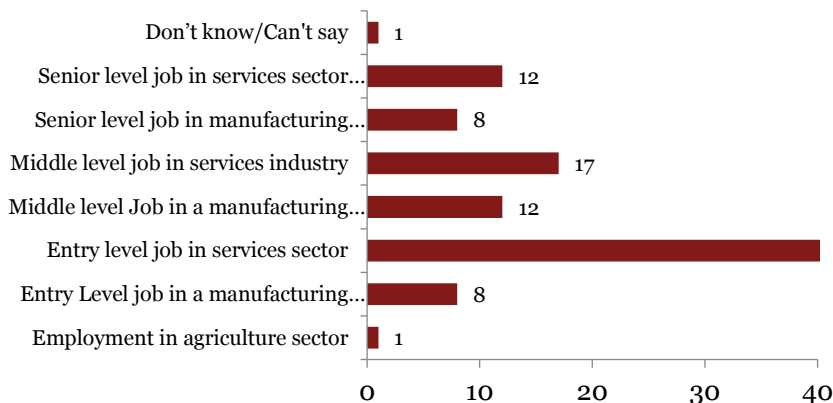
**Figure 19: Percentage of respondents aspiring for wage and self-employment - Raigad**



**Figure 20: Factors important for securing employment in area of interest (%) - Raigad**



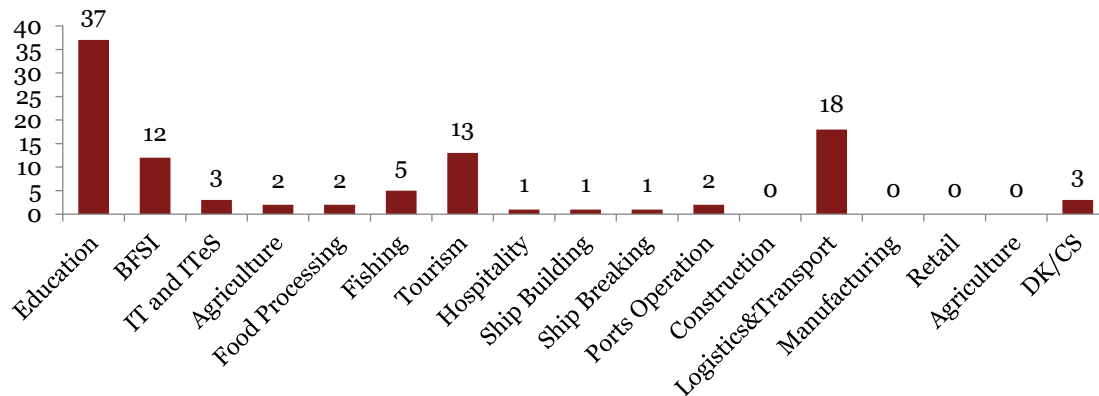
**Figure 21: Desired job profile after completion of education/training - Raigad**



Regarding job aspiration of the respondents after completion of education or training, it can be observed that there is a demand for services sector with 17% aspiring for middle level jobs and 41% aspiring for entry level jobs in service sector. This is followed by manufacturing industry (20%) and senior level jobs in services sector (12%) (Figure 21).

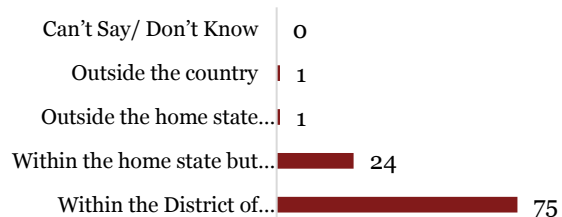
Further, Education (37%), Logistics & transport (18%), tourism (13%) and BFSI (12%) have been identified as sectors in which the respondents feel that they are mostly likely to get job which is in alignment with their aspiration for a job in the service sector space. The details of other sectors are mentioned in Figure 22.

**Figure 22: Sectors in which respondents’ foresee getting a desired job (%) - Raigad**



Out of total respondents, 99% preferred to work in the same State. It is important to note that three-fourth of the of the respondents (75%) preferred to work in the same district and 24% expressed willingness to migrate to other districts in the same state suggesting lack of flexibility among the youth of the district.(Figure 23)

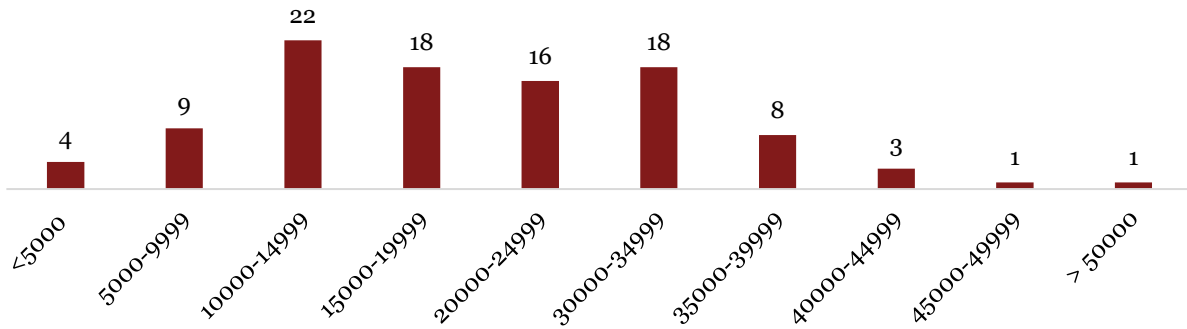
**Figure 23: Preferred work location of candidates - Raigad**



For majority of the respondents (22%) the monthly salary expectation was INR 10,000-15,000. And for 18% of respondents the expected salary is reported to be range in 15,000-20,000 per month (Figure 24).



**Figure 24: Monthly salary expectation of respondents - Raigad**

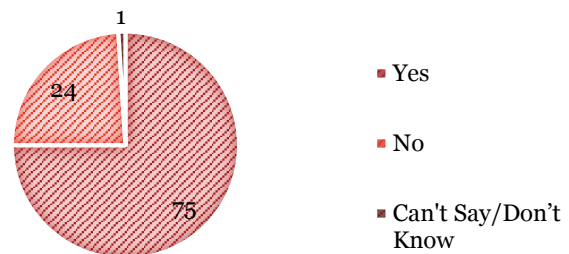


### Training Aspiration

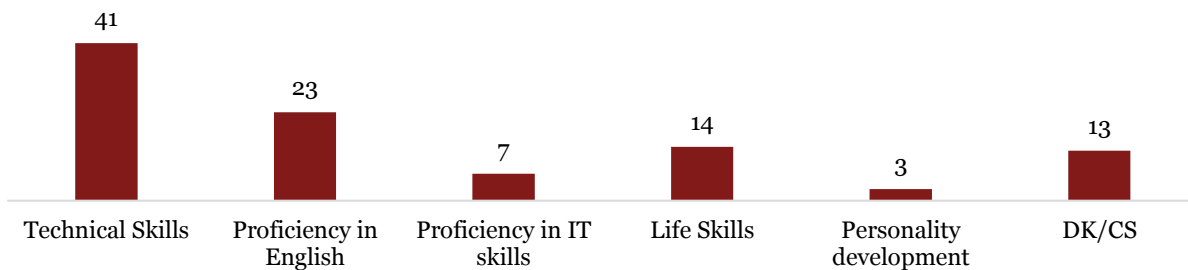
Regarding willingness of the respondents to participate in the training programme in next one year, 75% expressed interest whereas 24% expressed dis-interest (Figure 25).

Further, when enquired about the key focus areas of skill training, 41% of respondents reported that emphasis must be laid on technical skills followed by proficiency in English (23%) and life skills (14%) (Figure 26).

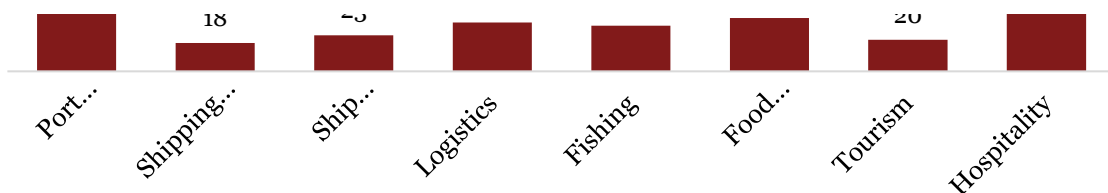
**Figure 25: Willingness to participate in trainings (%) - Raigad**



**Figure 26: Focus area on skills training - Raigad**



**Figure 27: Willingness of respondents to participate in trainings of different sectors - Raigad**

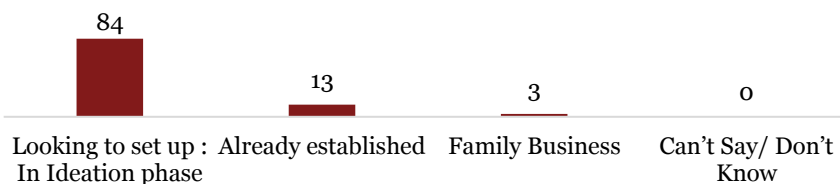


Overall there is a demand for training in hospitality (47%), port operations (40%), food processing (34%) and logistics (31%) (Figure 27: Willingness of respondents to participate in trainings of different sectors - Raigad)

### Self-Employment

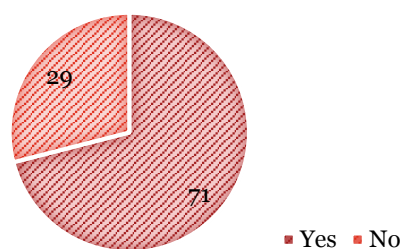
Regarding current status of the Entrepreneurial Venture of the respondents who aspired for self-employment, 3% were in family business and 84% were in their ideation stage (Figure 28).

**Figure 28: Current Status of Entrepreneurial Venture (%) - Raigad**



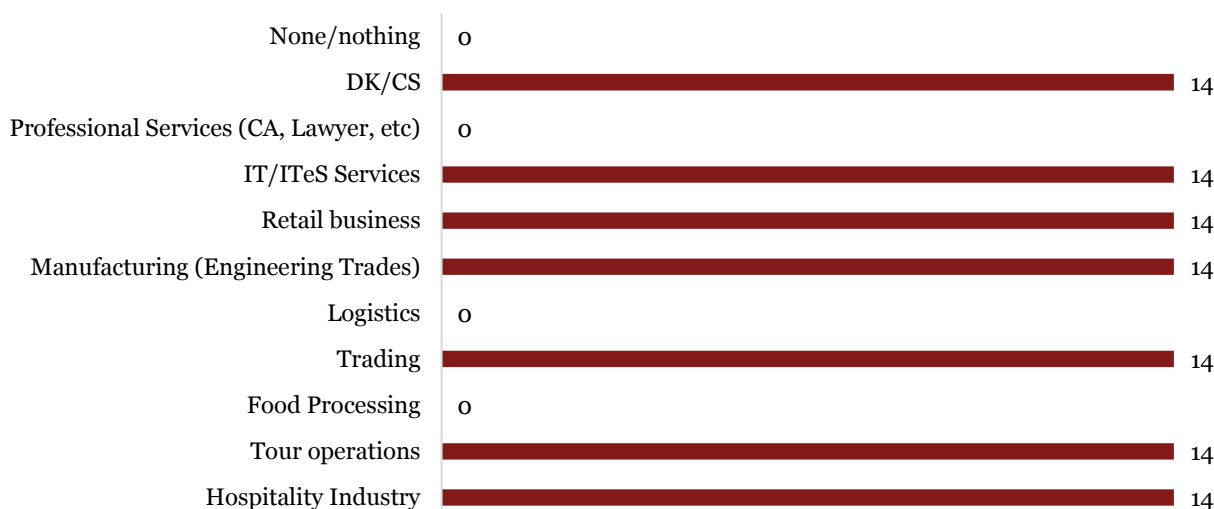
Further, 71% of the respondents expressed a desire to undergo a training programme for enhancing their entrepreneurial skills (Figure 29).

**Figure 29: Interested in skill development for enhancing entrepreneurial skills (%) - Raigad**



Retail business (14%), hospitality (14%), IT/ITeS services (14%), trading (14%), manufacturing (engineering trades) (14%) and tour operations (14%) have been identified as most preferred sectors for setting own enterprise (Figure 30).

**Figure 30: Sectors for establishing enterprise (%) - Raigad**



### 1.1.7. Training Infrastructure

Type of training infrastructure	Total number of institutions	No of trades	Top 5 trades based on enrolment and seat capacity
ITI	19	37	Electrician, Fitter, MMV. Draughtsman Civil, Welder
Polytechnic	6	13	Civil Engineering, Electrical And Electronics Engineering, Mechanical Engineering. Civil Engineering, Electronics & Communication Engg.
Directorate General of Shipping – Training Courses	2	10	Pre Sea Training for Deck Ratings, Diploma in Nautical Science, Proficiency in Survival Techniques, Personal Safety and Social Responsibility
PMKVY / PMKK	1	Not Available	Not Available
DDU GKY	Not available	Not available	Not available
Other State Govt skill centers	25	>30	Accounts Assistant Using Tally, Business Correspondent, Bar Bender, Shuttering Carpenter, Plumber, Media And Entertainment, Electrician

The Training infrastructure in the district is dominated by the ITIs and Polytechnics. However, the trades are largely focussed on technical and engineering trades.

- ITIs: There are 19 ITIs providing training in 37 different trades like civil, electrical and mechanical sectors.
- Polytechnics: Core engineering sectors like Civil, Electrical & Electronics, Electronics & Communication and Mechanical remain the most dominant trades, however, other trades such as Hotel Management, Mechatronics, Production Technology, etc. are also gaining traction.
- PMKVY & PMKK: The district is not covered under PMKVY. Under PMKK one centre has been allotted.
- DDU-GKY: The district is not covered under DDU-GKY Scheme.
- MSSDS: Through various institutions, MSSDS has sanctioned courses in more than 30 trades with capacity of around 1000. However, the duration and level of training vary widely and would require standardisation.

## 1.2. Mumbai

### About Mumbai

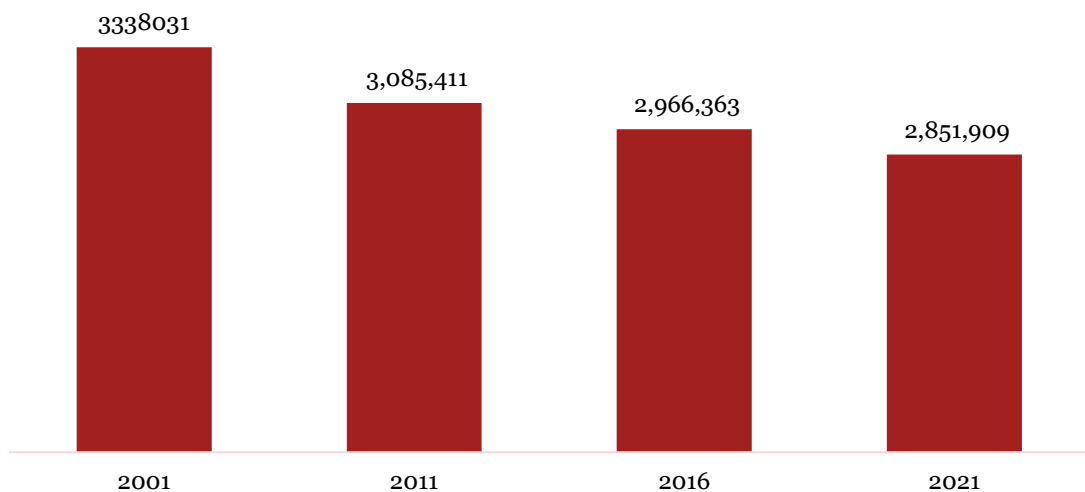
The financial and entertainment capital of the country, the city has been a historical port city and was known as India's Manchester for its textile production and exports. Various institutions including the Reserve Bank of India, the National Stock Exchange, Bombay Stock Exchange, SEBI etc. are located here. Headquarters of major Indian conglomerates like Reliance, Godrej, Future Group are located here. The Mumbai Port Trust is situated in Mumbai which has helped the industry to grow and the major exportable items produced in the district are engineering products, chemical products, Nylon Synthetic Readymade Garments, Embroidered Fabrics, Textiles, Cotton and Art, Silk, Food Products and Pharmaceutical Products. 74% and 25% contribution to GDDP comes from the Tertiary and Secondary sectors respectively<sup>8</sup>.

### 1.2.1. Demographic Profile<sup>9</sup>

Indicator	Value
Total population	3,085,411
Decadal rate of growth of population (2001-11)	-8%
Rural population	0%
Female	45%
SC population	7%
ST population	1%
Workforce participation (As % of total population)	41%
Main Workers (As % of total population)	39%
Marginal (As % of total population)	2%
Non-workers (As % of total population)	59%
*Number of people with vocational training in the age group of 15+ <sup>10</sup>	68 per 1,000

### Population trends<sup>11</sup>

Figure 31: Population trend in Mumbai (2001-2021)



<sup>8</sup> Brief Industrial Profile of Mumbai district, MSME

<sup>9</sup> Census 2011

<sup>10</sup> Employment and Unemployment Survey, District Level Estimates for Maharashtra, Labour Bureau, 2013-14

<sup>11</sup> Based on Census 2001 and 2011

**Figure 32: Population Pyramid Mumbai (2011)**

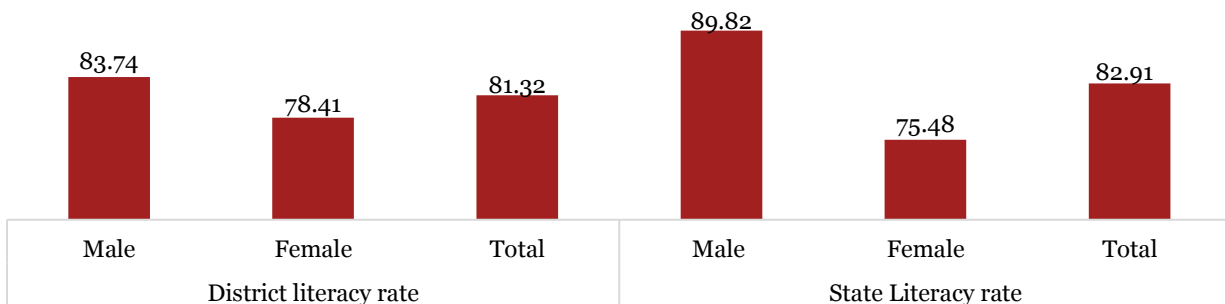


Mumbai will continue to benefit from the young population for another 10 years. The increasing price of real estate and congestion is making the city expensive to live in forcing the people to migrate to the suburbs and resulting in a decreasing population.

**Literacy rates<sup>12</sup>**

Total literacy rate of Mumbai, as per the Census 2011, is approximately 81%, which is slightly below the state’s level literacy rate of around 83%. Also, the female literacy rate of Mumbai (78.4%) is substantially lower than the male literacy rate, which is 83.7 % as per Census 2011.

**Figure 33: Mumbai vs Maharashtra literacy rates (2011)**

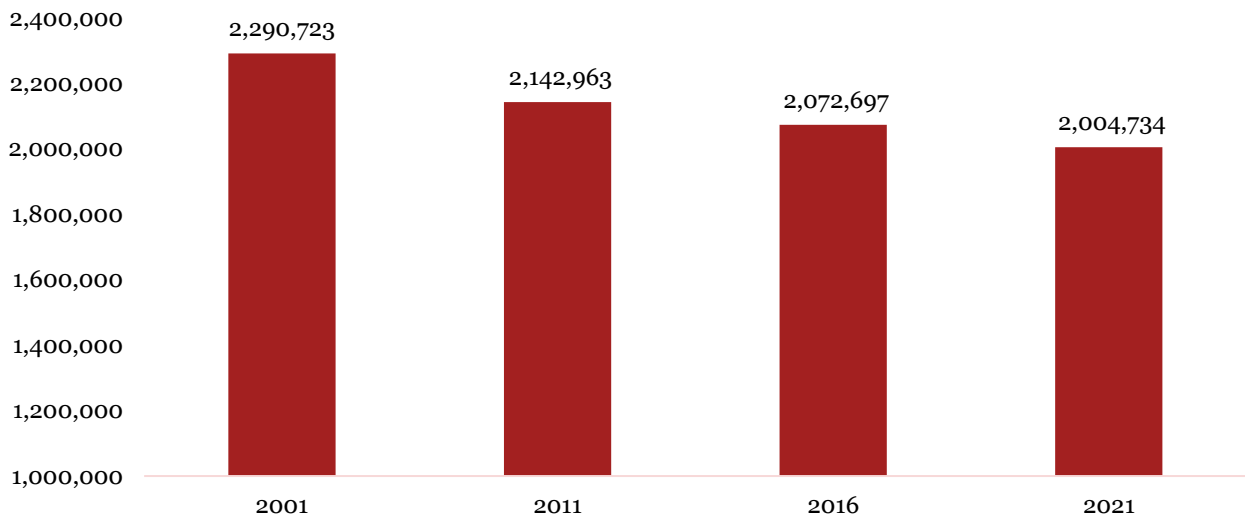


<sup>12</sup> Census 2011

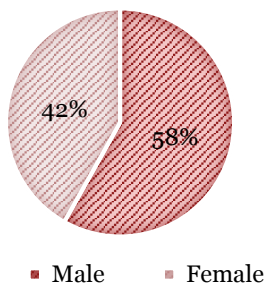
### Age specific population trends and education levels for 2011<sup>13</sup>

As per the Census 2011, the population in the age-group of 15 to 24 years was 599,667 (19.4% of the overall population).

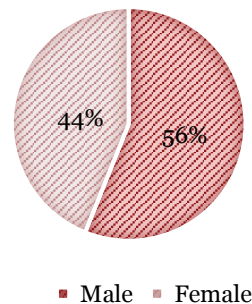
**Figure 34: Growth trend of population in the age group 15-59 years in Mumbai (2001-2021)**



**Figure 35: Age specific population in Mumbai (15-24 years)**



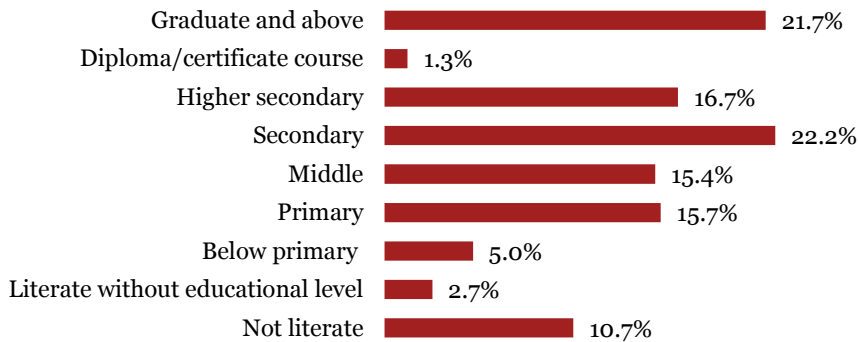
**Figure 36: Age Specific Population in Mumbai (15-59 years)**



While in the age group of 15-59 the share of population of males and females in total population of Mumbai is around 44% and 56% respectively, the share of population of males and females in the age group of 15-24 is 42% and 58% respectively. The share of the female population is thus higher in the 15-24 age category.

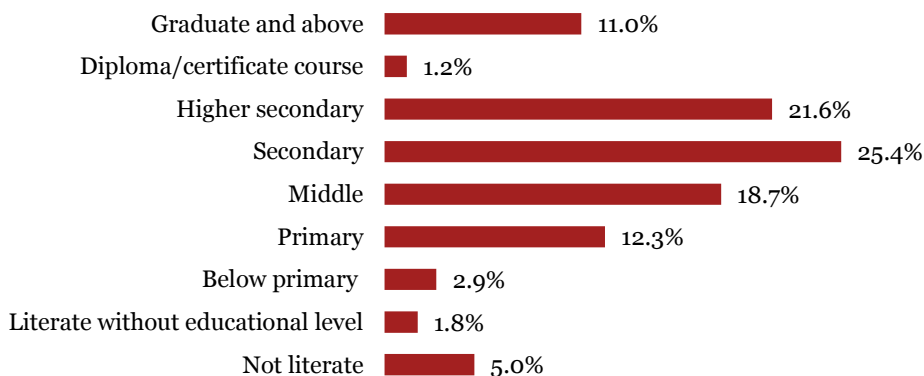
<sup>13</sup> Based on Census 2001 and 2011

**Figure 37: Age specific education level in Mumbai (15-59 years)**



The Census indicates that for the age category of 15-59 years, 10.7% of the population of Mumbai is not literate. 2.7% of the population in the age category are literate without any educational qualification, 5% have attended school till below primary level and 15.7% have completed schooling only up to primary level. 15.4% of the literate population have completed schooling up to the middle level, whereas around 22.2% of the population have been educated till secondary. Only 1.3% of the population of this district have done a certificate/diploma course and 21.7% have at least graduated, indicating that a graduate/post-graduate degree is more sought after than a certificate/diploma.

**Figure 38: Age specific education level in Mumbai (15-24 years)**

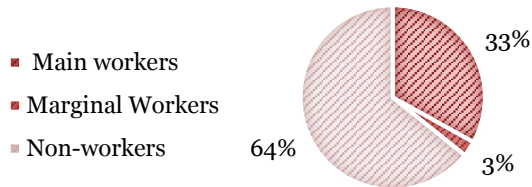


For the age category of 15-24 years, 5% of the population of Mumbai is not literate. 1.8% are literate without any educational qualification, 2.9% have attended school till below primary level and 12.3% have completed schooling only up to primary level. 18.7% of the population has done schooling up to the middle level, whereas, around 25.4% population has been educated till secondary level. Only 1.2% of the population of this district has done a certificate/diploma course and 11% have at least completed graduation.

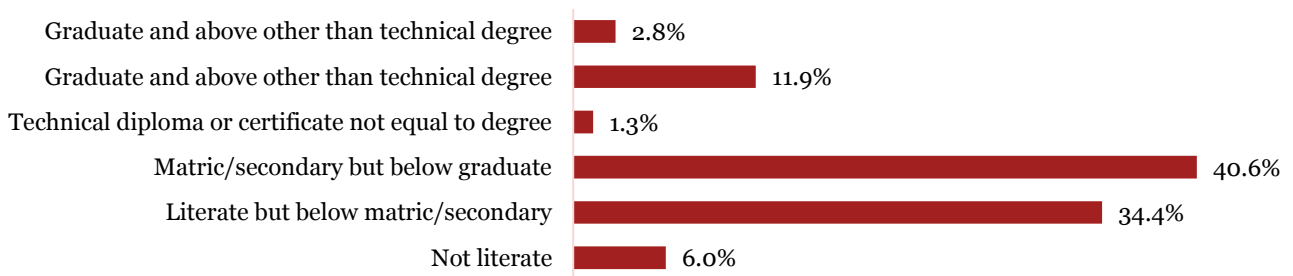
### Age specific distribution of workers and educational level

The total worker population ratio for this district, according to census 2011, comes out to be 47.73%. 64% of the population in the age group of 15-24 years are non-workers. 33% of the population is main worker, whereas 3% are engaged in marginal work i.e. work for 3-6 months during the year.

**Figure 39: Age specific distribution of workers in Mumbai (15-24 years)**



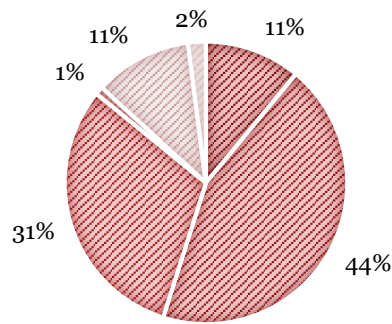
**Figure 40: Education level of marginal workers in Mumbai (15-24 years)**



Amongst the 8,183 marginal workers in the age group of 15-24 years, around 3% hold a technical degree or diploma equal to degree and 12% are graduate and above other than technical degree. 1% have a diploma or a certificate (not equal to degree). Around 41% are educated up to the matric/secondary level and around 34% are literate with an educational qualification of below matric/secondary level. 6% marginal workers in this age group are not literate.

**Figure 41: Education level for main workers in Mumbai (15-24 years)**



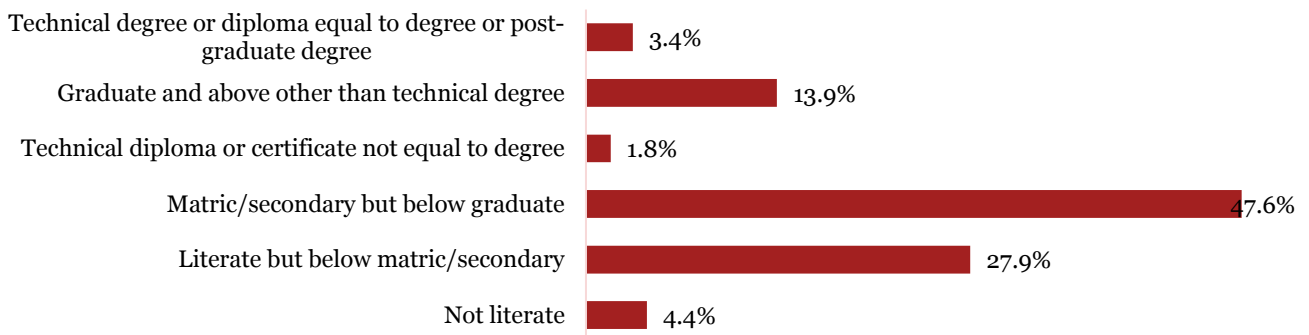


- Illiterate
- Literate but below matric/secondary
- Matric/secondary but below graduate
- Technical diploma or certificate not equal to degree
- Graduate and above other than technical degree
- Technical degree or diploma equal to degree or post-graduate degree

From census depicted in the figure, we find that the proportion of main workers who are illiterate (in the age category 15-24 years) is slightly less (3 percentage point difference between the two) than the proportion of marginal workers and who are illiterate. We also find that the proportion of main workers who are literate but below matric/secondary (in the age category 15-24 years) is more (12 percentage point difference between the two) than the proportion of marginal workers who are and are literate but

below matric/secondary. The proportion of main workers who are matric/secondary but below graduate (in the age category 15-24 years) is less (11 percentage point difference between the two) than the proportion of marginal workers who are and are matric/secondary but below graduate. For the remaining three educational levels, we find that the population shares are more or less the same across the two worker categories.

**Figure 42: Education level of non-workers in Mumbai (15-24 years)**

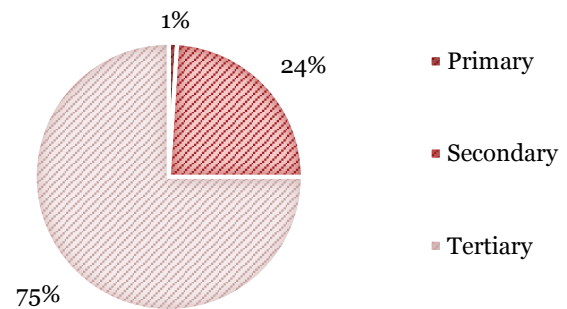


Amongst the 53,276 non-workers in the age group of 15-24 years, 1,722 (3.4%) hold a technical degree or diploma equal to degree and 7,951 (14%) are graduate and above other than technical degree. 871 (2%) have a diploma or a certificate (not equal to degree). 25,930 (47.6%) are educated up to the matric/secondary level and around 13,495 (28%) are literate but have attained an educational qualification of below matric/secondary level. 1,987 (4%) marginal workers in this age group are not literate.

### 1.2.2. Key Economic Drivers

The Gross Domestic Product of Mumbai district (at constant prices- 2004-05) was INR 19,190 crore in 2012-13 and it has steadily grown at a CAGR of 5.9% over the period 2004-05 to 2012-13. The sectoral composition of the district level GDDP has been computed based for the year 2011<sup>14</sup> and it shows that service sector contribution to district GDP is three fourth (75%) followed by secondary sector (24%) which is nearly one fourth and only 1% contribution from the primary sector. Further disaggregation suggests that manufacturing sector has a share of 20.8% in the district GDP. Trade hotels and restaurant have a share of 11.6% and Banking and Finance have a share of 11.4% in the district level GDP. Both sectors have witnessed impressive growth in their contribution to the district GDP with a growth rate of 26.7% and 29.4% respectively between 2004 and 2012.

Figure 43: Share in Mumbai district economy



The key economic drivers of the district are illustrated below:

<b>Port, maritime and logistics</b>	<ul style="list-style-type: none"> <li>• Presence of Mumbai Port Trust which has the capacity to handle 50MT</li> <li>• Construction of fifth oil berth at the project cost of INR 811 Crores is an upcoming investment</li> <li>• An MoU for the Allotment of dedicated anchorage to Tata Power project cost is expected to be signed and it is worth INR 60 Crores</li> <li>• Sassoon dock renovation plan of INR 52.19 Crores is proposed</li> </ul>
<b>Industrial Development</b>	<ul style="list-style-type: none"> <li>• Proposed investment by Trent hyper market worth INR 400 Crores</li> <li>• Proposed investment by Bang ETT Infrastructure worth INR 250 Crores</li> <li>• Proposed investment by global designs worth 50 Crores</li> </ul>
<b>Infrastructure Development</b>	<ul style="list-style-type: none"> <li>• An investment of INR 13,000 Cr is proposed for development of 33.2 km Mumbai Coastal Road</li> <li>• Establishment of Mumbai Trans Harbour Link (MTHL) worth INR 17,750 Cr</li> <li>• 33.5 km Mumbai Metro Phase III, Cuffe Parade SEEPZ corridor worth INR 23,136 Cr</li> </ul>
<b>Tourism</b>	<ul style="list-style-type: none"> <li>• Proposed investment of INR 47 Crores by Countryside Inn</li> </ul>

### 1.2.3. Priority Sectors

In Mumbai, the priority sectors that have been identified are **Port and Maritime sector** and other allied sectors **fisheries, logistics, tourism and hospitality**. In addition, **manufacturing, construction, banking & finance, retail and apparel** have also been identified as priority sectors, from the point of view of their contribution to district GDP.

<sup>14</sup> GDP data available in the NSDC Skill Gap Report was used for computing the sectoral share. Assumption: The growth rate of the sectors across the years would be constant and same as the growth rate of GDDP

### 1.2.4. About Port

Ports & Maritime			
<b>Major Ports:</b> 1	<b>Minor Ports:</b> 0		<b>Shipyards:</b> 0
Details			
Jawaharlal Nehru Port Trust			
<i>Operations:</i>	Land Lord Port model (PPP)	<i>Capacity</i>	5.2 Mn TEUs PA
<i>Key Cargo</i>	Coal, fertilizer, rice, sugar Alumina	<i>No of berths:</i>	63
		<i>Draft</i>	14.5
<i>Description and key Trend</i>	The Mumbai Port one of the few ports in India with a natural deep-water harbor. Mumbai Port is the largest port in India and handles bulk cargo traffic with its four jetties for handling Liquid chemicals, Crude and petroleum products. International container traffic of Mumbai Port is directed to the new and big JNPT on the opposite side of the Mumbai Harbour. The throughput has stagnated over difficulties in moving cargo out of the city.		
Terminal Operations			
	MbPT	ICTPL	
<i>Annual Capacity</i>	49.25 m tons	1 m tons	
<i>Type of Cargo handled</i>	Liquid bulk, Dry Bulk, Break bulk & Containers	Automobile and RoRo	
<i>High Demand Job Roles</i>	Ship crane operators, trailer drivers, Fork lift operator, Mechanics	Car drivers and Truck drivers	

### 1.2.5. Investments

The table below provides an overview of the investments that are in pipeline in next few years:

**Table 3: Proposed Key Investments for the year 2016-22 in Mumbai**

Sector	Proposed Investment (INR cr)	Number of Projects	Expected Employment	Key Players
Port & Maritime	1,106.5	6	11,735 persons	MbPT, Tata Power, HPCL & BPCL, MFDC
Infrastructure	79,617	6	Not Available	MMRDA, MMRC, MCGM, CIDCO
Projects registered with DIC	1,031.66	64	4,327 persons	Bang-ETT Group, Indian Oil Corporation, Trent Hyper Market

In the port and maritime sector, upgradation of Mumbai Port Trust has been identified as an important area of investment and includes activities such as construction of new berths, civil works for existing berths, infrastructure development for Ro-Ro facility etc. Some of the key investments in the sector and the expected employment are as follows:

**Table 4: Details of Investments in Port and Maritime sector in Mumbai**

Project	Proposed Investment (INR cr)	Expected Employment	Key Players
An MoU for the Allotment of dedicated anchorage to Tata Power Co. Ltd	60	20 persons - Direct and 50 persons - indirect during dredging operations. No increase during operation phase, since existing operation being shifted.	Tata Power Co. Ltd
Construction of fifth oil berth at JD – Capacity 22 MMTPA <ul style="list-style-type: none"> <li>Capital Dredging work of Fifth Oil Berth</li> <li>Civil works of Fifth Oil Berth</li> <li>Submarine Pipeline work</li> <li>Onshore pipeline, firefighting and electro mechanical works</li> </ul>	811 <ul style="list-style-type: none"> <li>66</li> <li>321</li> <li>208</li> <li>180</li> </ul>	<ul style="list-style-type: none"> <li>Direct- 20 persons</li> <li>Direct – 600 to 700 persons during 30 month period, Indirect – 300 persons.</li> <li>Direct – 200 persons during 18 months period, Indirect – 300 persons</li> <li>NA</li> </ul>	JD
Award of Contract for the project of “Providing infrastructure for Ro-Ro facility at Ferry Wharf	30	Direct -200 persons during construction period	MbPT
Lease agreement with HPCL for Bunkering Project & Tripartite Agreement between MbPT/ BPCL/HPCL for Bunkering Terminal.	50	During civil work construction – 50 persons for a period of 6 months and 20 persons during operations.	MbPT, HPCL, BPCL
Sassoon Dock Renovation	52.19	10,000 (Direct and Indirect)	MbPT

In Mumbai, the manufacturing industry is diverse with proposed investments in a variety of products such as paper, petroleum, kitchen and wooden furniture chemical manufacturing, plastic etc. Details of some of the key investments proposed in the manufacturing space are:

**Figure 44: Details of proposed investments in Manufacturing Industry, DIC Mumbai**

Paper	Petroleum	Kitchen and Wooden Furniture	Chemical	Plastic	Other Mfg Projects
Key player: Singnage & Graphic's • Investment: INR 40 cr • Employment: Direct- 650 Key Player: Sparglow enterprise • Investment: INR 2 cr • Employment: Direct- 10	Key Player: Indian Oil Corporation Ltd • Investment: INR 124. 61 cr.	Key Player: Global Designs • Investment: INR 50 cr • Employment: Direct-60	Key Player: Verus Enterprise • Investment: INR 5 cr • Employment: Direct-25	• Key Player: B D Industries • Investment: INR 15 cr • Employment: Direct-100	35 Firms engaged • Investment: INR 15.05 cr • Employment: Direct 192

Other key investments proposed for the services sector for 2016-22 are detailed out in the table below:

**Table 5: Proposed Investments in Service Sector in Mumbai, DIC Mumbai**

Project	Proposed Investment (INR cr)	Expected Employment	Key Players
Management & Consultancy Services	10	146 persons - Direct	Col Vill Research P. Ltd.
IT services	63	216 persons	TTS Consultancy Pvt. Ltd, Springboard 91 and other IT firms
Retail	400	1,000 persons -Direct	Trent hyper market
Tourism (Hotel Management)	47	105 persons	Countryside Inn

### 1.2.6. Youth Aspiration

The key findings of the youth aspirations include youths' exposure to vocational training and educational aspiration, job aspirations, training aspirations and self-employment.

#### Respondent Profile

The table below provides an overview of the respondent profile:

Profile	Details
Total Sample Size	384
Gender Profile	Male- 56% Female- 44%
Age Group	15-24 years
Education Level (top 3)	Higher secondary schooling with commerce (Class 11 to 12)- 24.6% Senior Secondary schooling(Class 9 to 10)- 24.1% Graduation with commerce- 16.2%
APL/BPL/AAY/Don't know (118)	APL-41 % BPL- 57% AAY- 0% Don't know- 2%

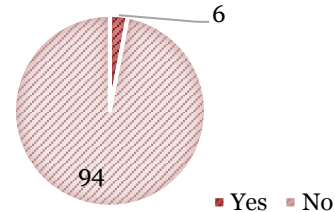
Profile	Details
Occupational Profile (top 3)	Salary from employment (29.7%), Own business (14.6%), Fishery (10.2%)

## Exposure to Vocational Training and Educational Aspiration

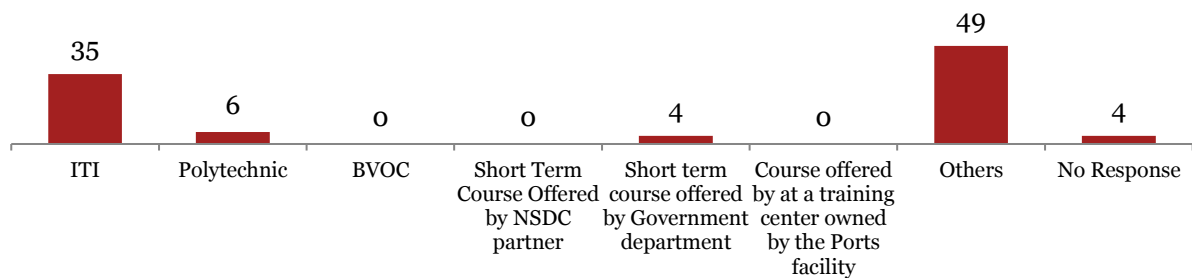
Regarding the exposure to the vocational training, most students reported that they had not completed any vocational training course. Overall, ~94% of the respondents had not enrolled in vocational training course (Figure 45).

Of the total respondents who underwent vocational training (which is ~6%), majority were from ITI (35%) and polytechnic (6%). Figure 46 exhibits the percentage of respondents who completed different types of courses as part of their vocational training.

**Figure 45: Percentage of respondents who completed vocational training courses - Mumbai**

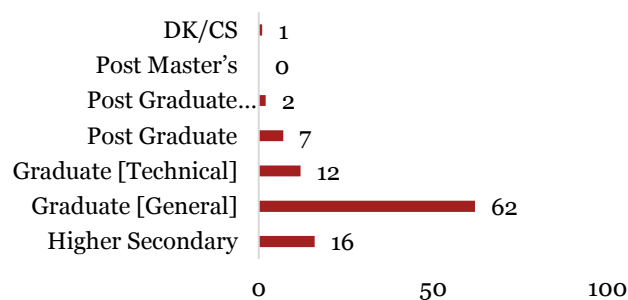


**Figure 46: Percentage of respondents completed courses in vocational training - Mumbai**



Further, the respondents were asked about the level of education they wished to attain. 69% of the respondents aspired to attain graduation and post-graduation level of education in general degrees. The desire to attain technical education is relatively low with only 14% aspiring for graduation or post-graduation in technical fields (Figure 47).

**Figure 47: Desired level of education - Mumbai**



level

## Job Aspiration

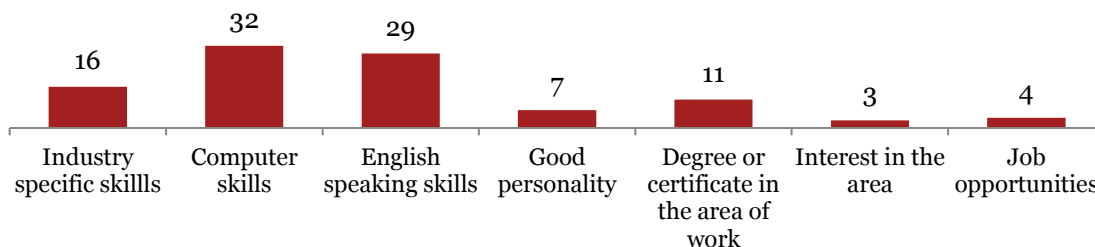
One of the important findings of the survey has been the high preference for wage employment over self-employment among the youth of the district. About 85% of the respondents reported to have preferred wage employment over self-employment (Figure 48).

The respondents were further asked to identify the factors important for securing employment in the area of interest. Nearly one-third (32%) of the respondents identified computer skills as the most important factor for securing employment followed by English speaking skills (29%) and industry specific skills (16%) (Figure 49).

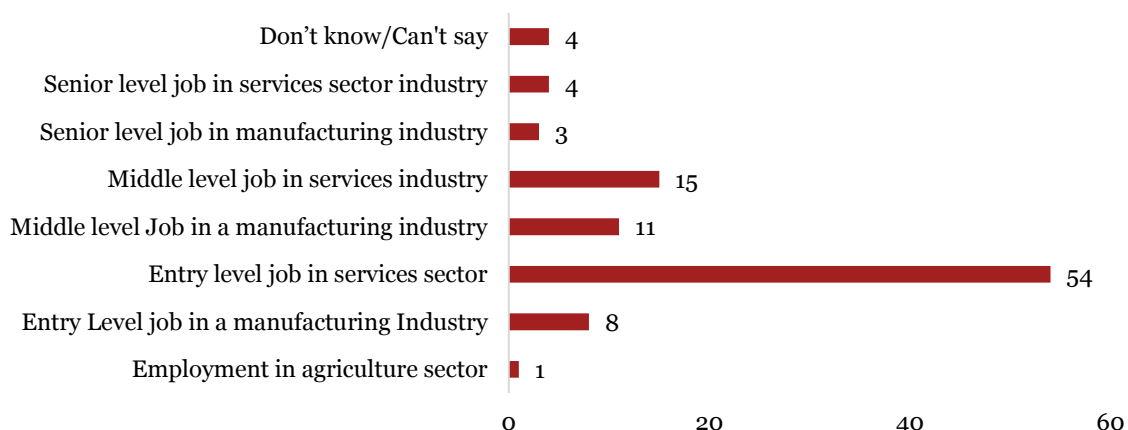
**Figure 48: Percentage of respondents aspiring for wage and self-employment - Mumbai**



**Figure 49: Factors important for securing employment in area of interest (%) - Mumbai**



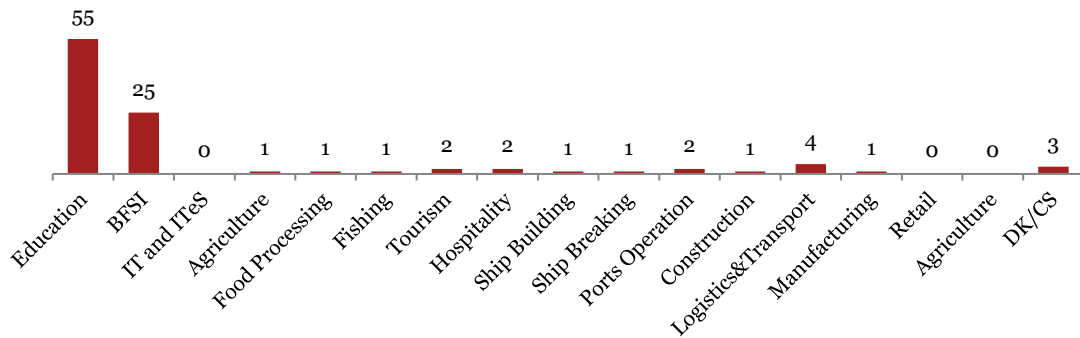
**Figure 50: Desired job profile after completion of education/training - Mumbai**



Regarding job aspiration of the respondents after completion of education or training, it can be observed that there is a demand for services sector with 15% aspiring for middle level jobs and 54% aspiring for entry level jobs

in service sector. This is followed by middle level jobs (11%), and entry level jobs in manufacturing industry (8%) (Figure 50).

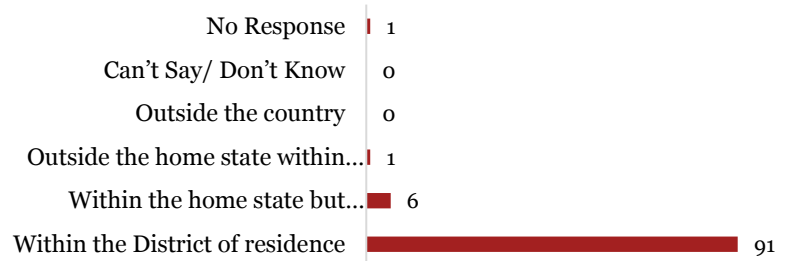
**Figure 51: Sectors in which respondents' foresee getting a desired job (%) - Mumbai**



Further, Education (55%) and BFSI (25%) have been identified as sectors in which the respondents feel that they are mostly likely to get job which is in alignment with their aspiration for a job in the service sector space. The details of other sectors are mentioned in (Figure 51: Sectors in which respondents' foresee getting a desired job (%) - Mumbai).

Out of total respondents, 97% preferred to work in the same State. It is important to note that 91% preferred to work in the same district and 6% expressed willingness to migrate to other districts in the same state suggesting lack of flexibility among the youth of the district (Figure 52).

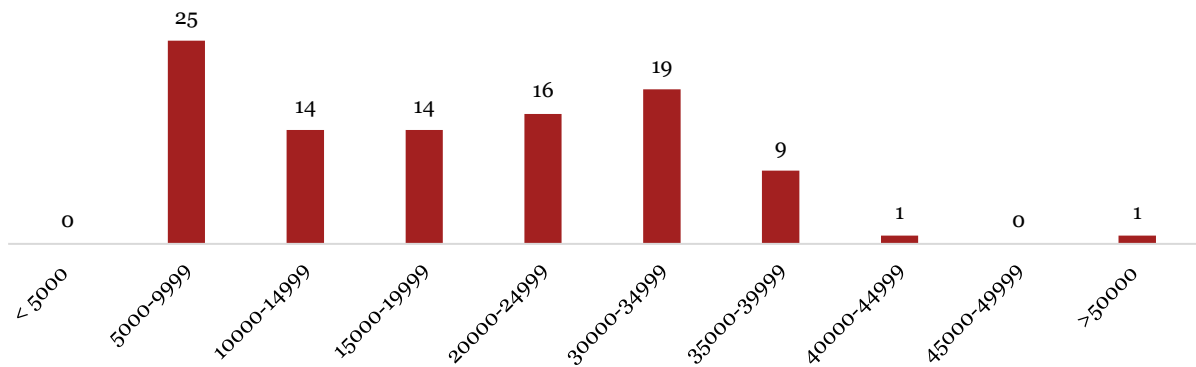
**Figure 52: Preferred work location of candidate - Mumbai**





For majority of the respondents (25%) the monthly salary expectation was INR 5,000-10,000. And for 28% of respondents the expected salary is reported to be range in 10,000-20,000 per month (Figure 53).

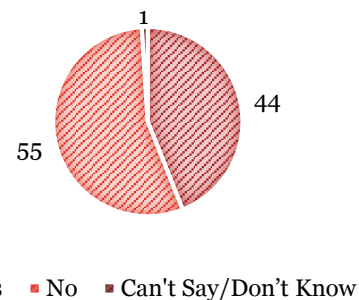
**Figure 53: Monthly salary expectation of respondents - Mumbai**



### Training Aspiration

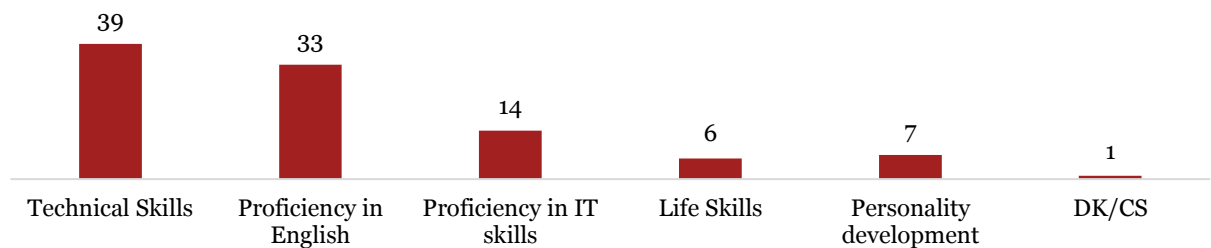
Regarding willingness of the respondents to participate in the training programme in next one year, 44% expressed interest whereas 55% expressed dis-interest (Figure 54).

**Figure 54: Willingness to participate in trainings (%) - Mumbai**

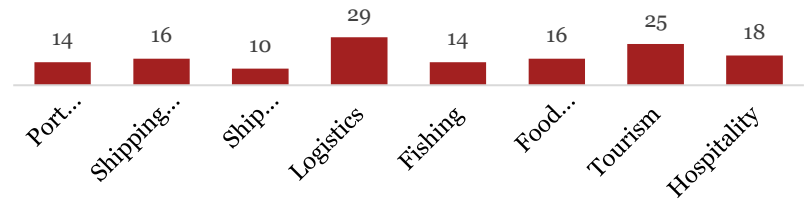


Further, when enquired about the key focus areas of skill training, 39% of the respondents reported that emphasis must be laid on technical skills followed by proficiency in English (33%), and proficiency in IT skills (14%) (Figure 55).

**Figure 55: Focus area on skills training - Mumbai**



Overall there is demand for training in logistics (29%), tourism (25%), hospitality (18%), food processing (16%), shipping operations (16%) and port operations (14%) (Figure 56).



## Self-Employment

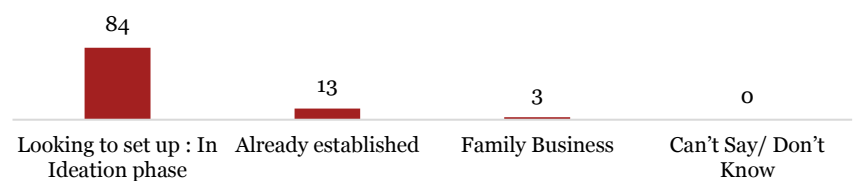
Regarding current status of the Entrepreneurial Venture of the respondents who aspired for self-employment, 3% were in family business and 84% were in their ideation stage (Figure 57).

Further, only 49% of the respondents expressed a desire to undergo a training programme for enhancing their entrepreneurial skills (Figure 58).

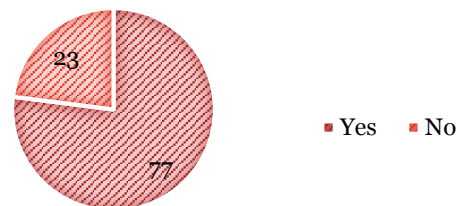
Hospitality (26%), food processing (13%) and trading (18%), manufacturing (engineering trades) (10%) and logistics (10%) have been identified as most preferred sectors for setting own enterprise (Figure 59).

**Figure 56: Willingness of respondents to participate in trainings of different sectors - Mumbai**

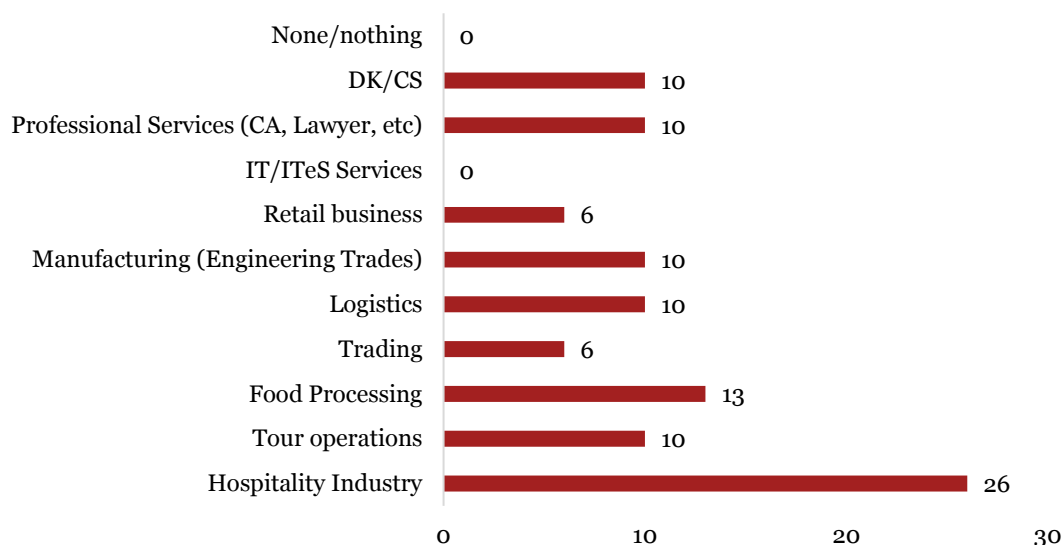
**Figure 57: Current Status of Entrepreneurial Venture (%) - Mumbai**



**Figure 58: Interested in skill development for enhancing entrepreneurial skills (%) - Mumbai**



**Figure 59: Sectors for establishing enterprise (%) - Mumbai**



### 1.2.7. Training Infrastructure

Type of training infrastructure	Total number of institutions	No of trades	Top 5 trades based on enrolment and seat capacity
<b>Industrial Training Institutes</b>	20	48	Electrician, Fitter, MMV. Draughtsman Civil, Welder
<b>Polytechnic</b>	24	34	Civil Engineering, Electrical And Electronics Engineering, Mechanical Engineering, Civil Engineering, Electronics & Communication Engg.
<b>PMKVY</b>	19	15	Assistant Hair Stylist Retail Trainee Associate Mobile Phone Hardware Repair Technician CCTV Installation Technician Domestic Data entry Operator Assistant Beauty Therapist
<b>Directorate General Training of Shipping Courses</b>	25	8	Pre Sea Training for Deck Ratings, Diploma in Nautical Science, Proficiency in Survival Techniques, Personal Safety and Social Responsibility
<b>DDU-GKY</b>	Not available	Not available	Not available
<b>Other State Govt. Skill Development Programs</b>	36	>1500	Customer Care Executive (Call Centre), Beauty Therapy and Hair Styling Level-1, Accounts Assistant Using Tally, Accounting, Domestic Data Entry Operator

The Training infrastructure in the district is dominated by the ITIs and Polytechnics. However, the trades are largely focussed on technical and engineering trades.

- ITIs: There are 20 ITIs providing training in 48 different trades. In civil engineering, electrical, mechanical sectors.
- Polytechnics: Core engineering sectors like Civil, Electrical & Electronics, Electronics & Communication and Mechanical remain the most dominant trades, however, other trades such as Hotel Management, Mechatronics, Production Technology, etc. are also gaining traction.

- 
- PMKVY & PMKK: The district is not covered under PMKVY with 19 centres offering 15 courses. Under PMKK one centre has been allotted. A Ministry of Shipping guided PMKK is also under plans.
  - DDU-GKY: The district is not covered under DDU-GKY Scheme
  - MSSDS: Through various institutions, MSSDC has sanctioned courses in more than 30 trades with capacity of around 1500. However, the duration and level of training vary widely and would require standardisation.

## 2. Skill Gap Assessment, Job Roles and Emerging Job Roles

### 2.1. Raigad

#### 2.1.1. Incremental Demand for Skilled & Semi Skilled Manpower<sup>15</sup>

The district of Raigad is witnessing increased industrialization and urbanization. These are affecting the incremental demand of skilled workforce in the district whereas as per our methodology manufacturing, Banking, Financial Services, and Insurance are going to generate the maximum demand for skilled and semi-skilled workers after factoring in future investments and technological changes.

**Table 6: Incremental Demand for Skilled & Semi Skilled Workers in Raigad**

Sector	2017	2018	2019	2020	2021	2022	Total
<b>Core Sectors</b>							
<i>Ports &amp; Allied</i>	1,323	1,429	1,543	1,667	1,799	1,943	9,704
<i>Logistics</i>	428	432	436	441	444	448	2,629
<i>Tourism</i>	666	909	1,073	1,275	1,276	1,073	6,272
<i>Construction</i>	1,316	1,362	1,413	1,462	1,514	1,569	8,636
<i>Fisheries</i>	308	315	323	331	339	308	1,924
<b>Other Dominant Sectors in the District</b>							
<i>BFSI</i>	1,529	1,613	1,705	1,800	1,901	2009	10,557
<i>Manufacturing</i>	2,945	3,043	3,143	3,248	3,355	3,467	19,201
<i>Trade (Retail &amp; Wholesale)</i>	208	210	211	213	214	214	1,270
<i>Agriculture</i>	-705	-653	-604	-558	-518	-478	-3,516
<b>TOTAL</b>							56,677

#### Key trends in Core Sectors

- **Ports and Allied Sectors:** Expected increase in the throughput at JNPT and the need for increased productivity to ensure competitiveness are key drivers for demand in skilled labour within the Ports & Allied Sector. The gradual shifting of traffic from Mumbai port to JNPT, the large quantities and share of container traffic, are expected to be dominating factors for pushing the labour requirements. The higher requirement of skills make it the third most promising employer of skilled labour.
- **Logistics:** The spillovers of the DMIC, JNPT expansion etc. is expected to increase the demand for total employment in the logistics sector. However, trends in technological advancements are also constraining the sector's labour intensity.
- **Tourism & Hospitality:** The proposed investment under the new tourism policy of the State Govt. (contributing to more than half the incremental jobs) and increasing trends in migration and tourists are key drivers of the incremental demand in the sector. The sector is increasingly demanding skilled workers especially within the Hospitality segment.
- **Construction:** In addition to the increasing urbanization, major infrastructure projects on DMIC, Smart Cities and Metro Rail are in the anvil. Thus there is going to be a considerable construction activity

<sup>15</sup> Incremental Demand Estimates the additional stock of workforce that are to be created given the expected Economic Conditions in the period of study. This may help in estimating requirement for fresh trainings.

---

in the district. However, the requirement of skilled and semi-skilled workers are considerably lower in the sector in comparison to others.

- **Fisheries:** The promotion of deep line fishing, cage culture etc. are expected to promote requirement of skilled workers in the fishing industry.

### ***Key trends in other Dominant Sectors in the District***

- **BFSI:** Raigad neighbors Mumbai, the financial hub of the country. The increasing costs of real estate in Mumbai and the recent rapid advancements in the Banking Sector like financial inclusion and increase in coverage through insurance can expect to drive the economy in the financial sector in the districts and employment of skilled labour in the district.
- **Manufacturing:** The proximity to the industrial hubs, JNPT, the Delhi Mumbai Industrial Corridor projects are expected to boost the manufacturing potential of Raigad. Key drivers of employment in the district are expected within the Automobile and Ancillary Industries, Electronics, etc.
- **Trade:** Though trade is a dominant sector in terms of both income and employment in the district, the low potential of “**New Jobs**” is expected due to decrease in requirement of labour due to the existing saturation and high share of unskilled workforce etc. Gradual consolidation of industry and increased formalization can expect to create a demand of reorganization and up-skilling of existing workforce.
- **Agriculture:** Increasing urbanization, the relatively lower returns are expected to generate lower demand in the sector. However, due to the demand for higher productivity and enhanced awareness and commitment to ecological conservation, there could be very negligible but a definite need for skilled labour force.

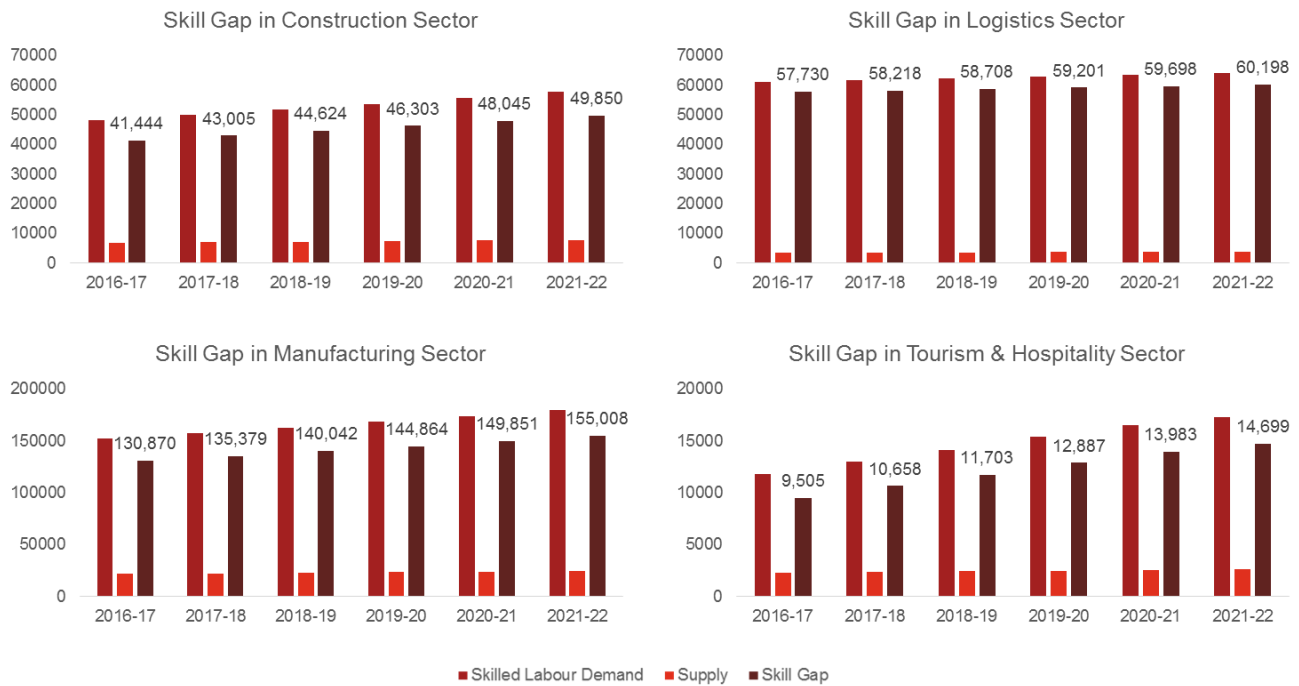
### ***2.1.2. Gap between Total Demand<sup>16</sup> and Supply for Skilled workforce in Select Sectors***

The gap in the existing total skilled workforce connotes the gap between the total requirement of skilled manpower and workforce in the district with recognized trainings in the said sectors.

---

<sup>16</sup> Total Demand refers to the total stock of workforce including the existing workforce in a sector in a district given the expected Economic Conditions in the period of study. This may help in identifying Scope for RPL and Upskilling

**Figure 60: Gap between Skilled Manpower Requirement and Workforce in District with Trainings in Select Sectors in Raigad**



- Construction Sector:** The availability of the skilled workforce is minimal with an estimate of less than 20% possessing any recognition in the sector to meet the **50,000 total requirement of skilled manpower**. The gap is set to increase from 41,444 to 49,850 assuming present rates of growth of population and demand for skilled workforce, a jump of 20%.
- Logistics Sector:** The logistics sector has historically been characterized by its informal nature and this is reflected in the very low levels of recognized skilled workforce with less than 5000 people with formal recognitions to meet the nearing **total requirement of skilled manpower** of 60,000. These are very exacerbated by the limited options available recognized trainings and certificates in the sector. However the general tapering of the incremental requirement for workforce in the district is expected to increase the gap marginally by 4%.
- Manufacturing Sector:** The sector has historically been served by degrees in engineering, polytechnic diplomas and certificates in ITIs in the region. In addition there have been certification programs in the MSME sector as well. However, there is an excessive shortage in the supply of skilled manpower, exceeding a lakh and thirty thousand. This gap is set grow by a further twenty thousand over the next five years.
- Tourism and Hospitality:** Given the present trends of increased formalization and requirement of skilled workers in the sector, the gap between the **total requirement of skilled manpower** and **availability of workforce with recognized trainings** is set to increase by a whopping 57% by 2022. The requirement for initiating new trainings and recognizing prior learning in the sector is thus a priority.

### 2.1.3. Job Roles High in Demand

This sections captures the jobs that have been reported to be high in demand in Raigad. The job roles that are listed below have been identified by the stakeholders. Across the sectors few of the job roles are susceptible to be

impacted by technological disruptions and automation. The sub-sections below describe the job roles that are high in demand across the sectors.

### *Port and Maritime Sector*

The port and maritime sector has reported high demand for crane operators and other skilled workers such as welders, electricians, and blasters. Safety has been underpinned as one of the areas that could be focused on for training workforce in the port and maritime sector. With increasing technological disruptions that are happening in the sector, there is a need for upskilling of the workforce. Increasing automation in the sector will make few of the manual jobs redundant. Overall, the jobs in this sector will be driven by the growth in the volume of cargo.

The matrix below captures the jobs roles that are high in demand:

<b>Job Roles: Port operations</b>	<b>Findings</b>
<ul style="list-style-type: none"> <li>• Rail Mounted Quay Crane Operator</li> <li>• Rail Mounted Gantry Crane Operator</li> <li>• Forklift Operator</li> <li>• Reach Stacker Operator</li> <li>• Crane Mechanic</li> </ul>	<ul style="list-style-type: none"> <li>• Well trained crane operators are difficult to find in the job market</li> <li>• Currently, Port operators and CFSs have to train the crane operators for at least three months</li> <li>• Trainings required on safety issues especially in handling crane operations</li> <li>• Port &amp; maritime sector is currently demanding a skilled workforce; the shortfall is being met with migrant labour</li> <li>• In Raigad there is a general range of technical skills related to the port and maritime that are in shortage; there have been unmet demand for skilled positions</li> <li>• Job losses amongst the semi-skilled in the sector are likely to happen; there will be a need for (up-skilling) technicians to manage emerging and sophisticated crane operating systems</li> </ul>
<b>Job Roles: Ship building and repairs</b>	<b>Findings</b>
<ul style="list-style-type: none"> <li>• Painter</li> <li>• Blaster</li> <li>• Mechanical/steel fitter</li> <li>• Brazers, machinists for lathe</li> <li>• Drilling and cutting</li> <li>• Dock rigger</li> <li>• Painter</li> <li>• Electrician</li> <li>• Welder</li> </ul>	<ul style="list-style-type: none"> <li>• Upcoming ship yard facilities such as Bombay Marine, and Das Offshore will require skilled manpower</li> <li>• The small pool of local skilled workers contributes directly to shortages of qualified workforce</li> <li>• The more complex the skill, the more likely the shortage of suitably qualified local citizens</li> <li>• Shortages become even more acute where training avenues for specific occupations are limited and where access to high-quality work experience is needed</li> <li>• Stakeholders indicated preference for hiring ITI graduates</li> </ul>

### *Other Priority Sectors*

The job roles that are high in demand in the sectors and that have been identified as priority sectors are listed in this sub-section. Like port and maritime sector, sectors such as logistics, manufacturing, and construction will also be susceptible to technological disruptions and automation, which will negatively impact jobs of manual nature.

### *Logistics*

Truckers are high in demand but the existing workforce that is engaged in trucking lacks life skills. Truckers who could be equipped with skills for handling hazardous substances will be greatly demanded by the manufacturing firms that are located in industrial areas such as Taloja. Automation will impact manual jobs in this sector.

The matrix below captures the jobs roles that are high in demand:

<b>Job Roles: Logistics</b>	<b>Findings</b>
<ul style="list-style-type: none"> <li>• Surveyors</li> <li>• Supervisors</li> <li>• Hydraulic Axle Operator</li> </ul>	<ul style="list-style-type: none"> <li>• Increasing volumes of cargo, the impending fourth terminal, and 31 CFSs that are located in JNPT area demand skilled manpower</li> </ul>



<ul style="list-style-type: none"> <li>• Truck Driver</li> <li>• Helper</li> </ul>	<ul style="list-style-type: none"> <li>• CFSs demand a skilled workforce with a shortfall being met with migrant labor</li> <li>• Skills shortages for handling hazardous substances</li> <li>• The small pool of skilled local workers contributes directly to shortages of qualified supervisors who are from Raigad</li> <li>• Life skills training required for truckers</li> <li>• Increased use of ICT and automation in work processes will impact the manual jobs</li> </ul>
--	--

## Construction

Projects such as smart cities will demand skilled workforce that will be able to use smart technologies in not only building the smart cities but also maintaining them. There will be a demand for workforce that could work in renewable energy domain. Other projects such as Railways and Metro will require skilled workforce in structure design and maintenance, finishes, and electrical works for building huge infrastructural facilities.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Construction	Findings
<ul style="list-style-type: none"> <li>• Solar PV installer (Civil)</li> <li>• Fabricator</li> <li>• Supervisor-Structure</li> <li>• Supervisor-Finishes</li> <li>• Supervisor - Electrical Works</li> <li>• Supervisor - Roads &amp; Runways</li> </ul>	<ul style="list-style-type: none"> <li>• Smart city projects and other infrastructural development projects such as the Railways and Metro will require skilled workforce</li> <li>• Site workers will require skills to use new, innovative technological devices and smart systems</li> <li>• Skills to manage increased integration of technologies into the building structures</li> <li>• Demand for new age installation and maintenance skills especially in renewable energy sector</li> <li>• Limited apprenticeship arrangement exists, combining formal training off-the-job with on-the-job training</li> </ul>

## Manufacturing

Raigad is an industrial and manufacturing hub that caters to sectors such as Pharmaceuticals, Petrochemicals, Dyes, Plastics, Glass, Rubber, and Chemicals. These sectors demand skilled workforce that could work in manufacturing processes. Emerging technology such as 3D or additive manufacturing will shape the manufacturing sector in next few years and the workforce engaged in manufacturing will have to upgrade its skills to be in tune with the emerging market requirements. This sector will also require technological literacy among the workers.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Manufacturing	Findings
<ul style="list-style-type: none"> <li>• Production Assistants</li> <li>• Welder</li> <li>• Fitter</li> <li>• Mechanic</li> <li>• Plumber</li> <li>• Electrician</li> <li>• Turner</li> <li>• Motor Binding</li> </ul>	<ul style="list-style-type: none"> <li>• Industrial areas such as Taloja demand skilled workforce</li> <li>• Supervisory skills are also needed in the roles of foremen, leading hands and supervisors</li> <li>• Limited apprenticeship arrangement exists, combining formal training off-the-job with on-the-job training</li> <li>• Stakeholders indicated preference for hiring ITI graduates</li> <li>• Additive manufacturing or 3D printing will impact the manufacturing processes</li> <li>• There will be a general need for medium to high technology literacy throughout the sector</li> </ul>

## Tourism

Tourism sector in Raigad buoyed by beaches, forts, and temples demands skilled workforce. A small pool of local workforce is complemented with a migrant workforce that is working to support the tourism sector. There are opportunities to engage local youth in this sector. Training in the sector, among others, will require focus on English language skills. Tourism sector will also see automation in its front end and back end processes, automation that will impact manual jobs.

The matrix below captures the jobs roles that are high in demand:

<b>Job Roles: Tourism</b>	<b>Findings</b>
<ul style="list-style-type: none"> <li>• Front Office Executive</li> <li>• Chef</li> <li>• Kitchen Steward</li> <li>• Housekeeping Supervisor</li> <li>• Tour guide</li> <li>• Facility Store Keeper</li> <li>• Billing Executive</li> <li>• Cruise/Boat/Jetty in charge</li> </ul>	<ul style="list-style-type: none"> <li>• Small pool of adequately skilled personnel at the skilled worker level results in a small pool of people from which to draw for higher positions</li> <li>• Workforce is trained, but it generally lacks skills and experience required in the workplace</li> <li>• Focus required on communication skills/public relations; reporting skills; administration skills and financial skills</li> </ul>

### *Fisheries*

In Raigad, people have land holdings that could be used for aquaculture and mariculture. Trainings imparted in aquaculture could help in providing the fishing community an insight into a more profitable way of doing business and also to make proper utilization of unutilized land parcels that are unfit for agriculture. Trainings in marine fish farming is necessary to make the fish farmers aware about the scientific procedure of fish farming and thereby improve on the traditional practices. Further, shrimp export houses in Panvel area demand skilled workforce.

The matrix below captures the jobs roles that are high in demand:

<b>Job Roles: Fisheries</b>	<b>Findings</b>
<ul style="list-style-type: none"> <li>• Cold Storage Technician</li> <li>• Warehouse Manager</li> <li>• Mechanic</li> <li>• Glass/Tunnel/Trolley Freezer Operator</li> <li>• Grading supervisor</li> <li>• De-heading supervisor</li> <li>• Aquaculture Technician</li> <li>• Mariculture Technician</li> </ul>	<ul style="list-style-type: none"> <li>• Raigad can hugely benefit from improved fisheries practices</li> <li>• Export potential for shrimps</li> <li>• Unused land parcels can be used for aquaculture and mariculture</li> <li>• Improved skills are particularly needed for aquaculture and mariculture</li> </ul>

### *BSFI*

A small pool of local workforce is engaged in this sector. There are opportunities to train the local youth in this sector. BSFI sector is very much susceptible to automation of front end and back end processes.

The matrix below captures the jobs roles that are high in demand:

<b>Job Roles: BSFI</b>	<b>Findings</b>
<ul style="list-style-type: none"> <li>• Teller</li> <li>• Value banker</li> <li>• Debt recovery agent</li> <li>• Insurance agents</li> </ul>	<ul style="list-style-type: none"> <li>• Focus required on language skills</li> <li>• Small pool of adequately skilled personnel at the skilled worker level results in a small pool of people from which to draw for higher positions</li> <li>• Up-skilling (technology and business skills) will be important</li> <li>• Automation and software could render many lower skilled customer service roles obsolete</li> </ul>

## 2.2. Mumbai

### 2.2.1. Incremental Demand for Skilled & Semi Skilled Manpower<sup>17</sup>

The greater Mumbai region is expected to be driven by demand for skilled workers in the services sector, specifically in sectors relating to logistics, Banking Financial Services & Insurance, Communication and tourism. The increasing formalization and new age jobs customized to suit the requirements to service the needs of the one of the densest populated regions in the world can be expected to emerge.

**Table 7: Incremental Demand for Skilled & Semi Skilled Workers in Mumbai**

Sector	2017	2018	2019	2020	2021	2022	Total
<b>Core Sectors</b>							
<i>Ports &amp; Allied</i>	NA	NA	NA	NA	NA	NA	NA
<i>Logistics</i>	2,723	2,744	2,766	2,785	2,808	2,830	16,656
<i>Tourism</i>	1,193	1,442	1,608	1,816	1,820	1,623	9,502
<i>Construction</i>	727	732	740	744	750	756	4,449
<i>Fisheries</i>	49	51	51	51	51	52	305
<b>Other Dominant Sectors in the District</b>							
<i>BFSI</i>	2,142	2,159	2,176	2,192	2,210	2,226	13,105
<i>Manufacturing</i>	727	732	740	744	750	756	4,449
<i>Trade (Retail &amp; Wholesale)</i>	2,121	2,138	2,154	2,171	2,187	2,205	12,976
<i>Communication</i>	1,326	1,335	1,348	1,357	1,367	1,378	8,111
<b>TOTAL</b>							69,553

#### Key trends in Core Sectors

- **Ports and Allied Sectors:** The development of the Greater Mumbai Region as a commercial, entertainment capital over the decades and influx of population, has posed several challenges to the logistics of port operations. The operations of the port have been running at excess capacity and there are no visible increments or plans for the same. The requirement of labour can therefore be expected to only decrease in the near future.
- **Logistics:** The city continues to be the hub for trade activities and manufacturing and has resulted in continued requirement for skilled workforce in the logistics sector, which is an allied sector to the former. A major driver of the sector would also be the increasing requirement in Retail through the development of E-Commerce, cold storages for higher end food products etc.
- **Tourism & Hospitality:** Being the state capital, having opportunities in business, entertainment, and employment and also being a gateway to the entire Western India, the city would continue to require considerable workforce in the Tourism & Hospitality sector. New developments include development of themed restaurants, opportunities in cruises and increasing formalization of Hospitality sector.
- **Construction:** The construction sector in Mumbai has experienced recent slow-down and the incremental numbers for workers is resultantly lower though still significant. The focus of developmental work in the suburbs in Thane and Raigad Districts are also contributing to the shift in labour from the city.

<sup>17</sup> Incremental Demand Estimates the additional stock of workforce that are to be created given the expected Economic Conditions in the period of study. This may help in estimating requirement for fresh trainings.

- **Fisheries:** The incremental requirement for fishing would be minimal due to the lack of optimal space and high cost of living in the city's limits.

### ***Key trends in other Dominant Sectors in the District***

- **BFSI:** Mumbai is the financial hub of the country, home to leading institutions including the Stock Exchanges, Banks etc. The recent rapid advancements in the Banking Sector like financial inclusion, increase in coverage through insurance, can expect to drive the economy in the financial sector in the districts and employment of skilled labour in the district.
- **Manufacturing:** The economy of the district is moving away from the manufacturing sector to the services sector and resultantly the incremental skill requirements are expected to be lower than in other sectors.
- **Trade:** Trade is a dominant sector in terms of both income and employment in the district. The high potential of “**New Jobs**” is expected due to increase in requirement of specialized labour in higher organized workforce. Gradual consolidation of industry and increased formalization can expect to create a demand of reorganization and up-skilling of existing workforce.
- **Communication:** The communication industry is set to be boosted by new age technology and implementation of programmes such as Digital India. The increasing penetration of internet in recent times have contributed to the requirement of personnel in both hardware part of communications as well as roles in the media.

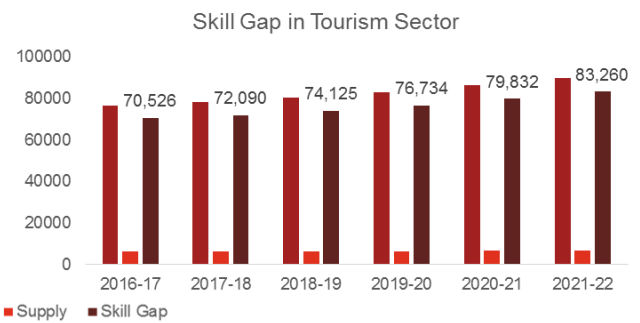
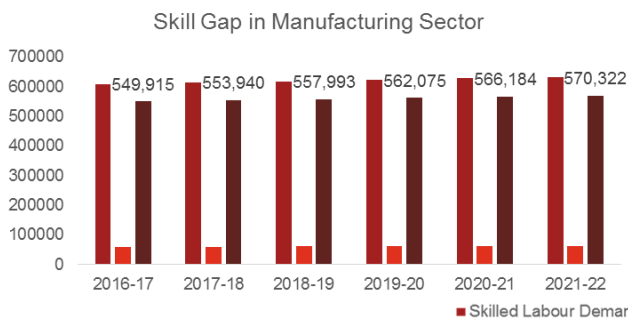
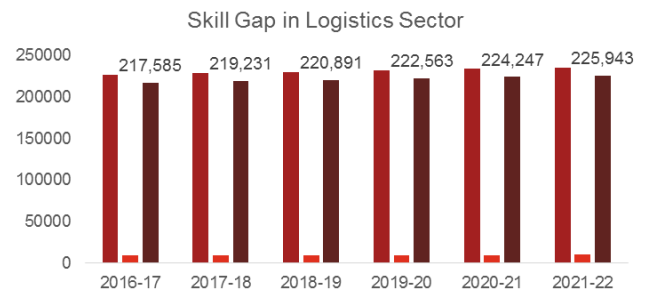
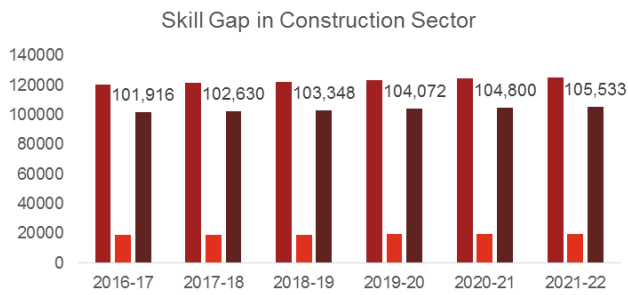
### ***2.2.2. Gap between Total Demand and Supply for Skilled workforce in Select Sectors<sup>18</sup>***

The gap in the existing total skilled workforce connotes the gap between the **total requirement of skilled manpower** and **workforce in the district with recognized trainings in the said sectors**.

#### **Figure 61: Gap between Skilled Manpower Requirement and Workforce in District with Trainings in Select Sectors in Mumbai**

---

<sup>18</sup> Total Demand refers to the total stock of workforce including the existing workforce in a sector in a district given the expected Economic Conditions in the period of study. This may help in identifying Scope for RPL and Upskilling



- Construction Sector:** The availability of the skilled workforce is minimal, with an estimate of less than 10% possessing any recognition in the sector, to meet the 1 lakh **total requirement of skilled manpower**. The gap is set to increase by 4% assuming present rates of growth of population and demand for skilled workforce.
- Logistics Sector:** The logistics sector has historically been characterized by its informal nature and this is reflected in the very low levels of recognized skilled workforce with around 10,000 people with formal recognitions to meet the nearing **total requirement of skilled manpower** of around 2 lakhs at less than 5%. These are exacerbated by the limited options available for recognized trainings and certificates in the sector within the district.
- Manufacturing Sector:** The sector has historically been served by degrees in engineering, diplomas in polytechnics and certificates in ITIs in the region. However, in the Greater Mumbai Region, the high share of informal employment in the sector results in less than 10% of the population having formal recognition of training.
- Tourism and Hospitality:** Given the present trends of increased formalization and requirement of skilled workers in the sector, the gap between the **total requirement of skilled manpower** and **availability of workforce with recognized trainings** is set to increase by 13,000 by 2022. Presently around 8% of the demand is met and without an augmentation of training capacity, it would fall to around 7% in 2022.

### 2.2.3. Job Roles High in Demand

This sections captures the jobs that have been reported to be high in demand in Mumbai. The job roles that are listed below have been identified by the stakeholders. Across the sectors, few of the job roles are susceptible to be impacted by technological disruptions and automation. The sub-sections below describe the job roles that are high in demand across the sectors.

#### Port and Maritime Sector

The port and maritime sector has reported high demand for crane operators and other skilled workers such as fork lift operators and electricians. The stakeholders have recommended 'safety' as one of the critical component

to be included in the training programmes that cater to this sector. Technological disruptions and automation in the sector is expected to impact jobs in this sector.

The matrix below captures the job roles that are high in demand:

<b>Job Roles: Port operations</b>	<b>Findings</b>
<ul style="list-style-type: none"> <li>• Ship Crane Operator</li> <li>• Mobile Crane Operator</li> <li>• Wharf Crane Operator</li> <li>• Forklift Operator</li> <li>• Crane Mechanic</li> <li>• Electrician</li> </ul>	<ul style="list-style-type: none"> <li>• Well trained crane operators are much sought after</li> <li>• Port operators have to train the crane operators for at least three months before they are inducted to operate the cranes</li> <li>• Trainings required on safety issues especially in handling crane operations</li> <li>• Port &amp; maritime sector is currently demanding</li> <li>• Job losses amongst the low skilled in the sector are likely to happen; there will be a need for (up-skilled) technicians to manage emerging and sophisticated systems embedded in this sector</li> </ul>

### *Other Priority Sectors*

The job roles that are high in demand in the sectors and that have been identified as priority sectors are listed in this sub-section. Like port and maritime sector, sectors such as logistics, manufacturing, and construction will also be susceptible to technological disruptions and automation, which will negatively impact jobs of manual nature.

### *Logistics*

There is a demand for truckers but the existing workforce that is engaged in trucking lack life skills. Automation in warehousing, material handling, and intelligent transportation systems will impact manual jobs in this sector. The matrix below captures the jobs roles that are high in demand:

<b>Job Roles: Logistics</b>	<b>Findings</b>
<ul style="list-style-type: none"> <li>• Surveyors</li> <li>• Supervisors</li> <li>• Hydraulic Axle Operator</li> <li>• Truck Driver</li> <li>• Helper</li> </ul>	<ul style="list-style-type: none"> <li>• The volumes of cargo will have to grow to support the workforce engaged in this sector</li> <li>• Migrant labor engaged in this sector</li> <li>• Life skills training required for truckers</li> <li>• Increased use of ICT and automation in work processes will impact the manual jobs</li> </ul>

### *Construction*

In Mumbai, projects such as Mumbai Coastal Road, Mumbai Trans Harbour Link and Mumbai Metro Phase III, Cuffe Parade SEEPZ corridor will require a workforce that is skilled in structural design, maintenance, Foreman Wet Finishing and Flooring, and electrical works for building huge infrastructural facilities and will demand skilled workforce that will be able to use smart technologies in building large infrastructural facilities.

The matrix below captures the jobs roles that are high in demand:

<b>Job Roles: Construction</b>	<b>Findings</b>
<ul style="list-style-type: none"> <li>• Supervisor-Structure</li> <li>• Supervisor - Electrical Works</li> <li>• Foreman Wet Finishing and Flooring</li> <li>• Supervisor - Roads &amp; Runways</li> <li>• Drivers for Tippers, Bulldozers, JCB ,Trailers and Excavators</li> </ul>	<ul style="list-style-type: none"> <li>• Site workers will require skills to use new, innovative technological devices and smart systems</li> <li>• Skills to manage increased integration of technologies into building civil structures</li> <li>• Though every equipment operator holds a heavy vehicle license, the basic awareness and knowhow on the operational features of specific equipment are lacking, impacting productivity</li> <li>• Limited apprenticeship arrangement exists, combining formal training off-the-job with on-the-job training</li> <li>• Migrant labor engaged in this sector</li> </ul>

## Manufacturing

Emerging technology such as 3D or additive manufacturing, and Automated and Internet-based Workflow Management Systems will shape the manufacturing sector in next few years and the workforce engaged in manufacturing will have to upgrade their skills to be in tune with the emerging market requirements. This sector will also require technological literacy among the workers. The matrix below captures the jobs roles that are high in demand:

Job Roles: Manufacturing	Findings
<ul style="list-style-type: none"> <li>• Production Assistants</li> <li>• Quality Assistants</li> <li>• Design Supervisors</li> <li>• Welder</li> <li>• Fitter</li> <li>• Mechanic</li> <li>• Plumber</li> <li>• Electrician</li> </ul>	<ul style="list-style-type: none"> <li>• Supervisory skills are needed in the roles of foremen, leading hands and supervisors</li> <li>• Limited apprenticeship arrangement exists, combining formal training off-the-job with on-the-job training</li> <li>• Stakeholders indicated preference for hiring ITI graduates</li> <li>• Additive manufacturing or 3D printing will impact the manufacturing processes</li> <li>• There will be a general need for medium to high technology literacy throughout the sector</li> <li>• Knowledge of the production process and technical concepts required for complex manufacturing processes</li> </ul>

## Tourism

Training in this sector will require focus on English language skills. Tourism sector will also see automation in its front end and back end processes, automation that will impact manual jobs.

The matrix below captures the jobs roles that are high in demand:

Job Roles: Tourism	Findings
<ul style="list-style-type: none"> <li>• Front Office Executive</li> <li>• Chef</li> <li>• Kitchen Steward</li> <li>• Housekeeping Supervisor</li> <li>• Tour guide</li> <li>• Facility Store Keeper</li> <li>• Billing Executive</li> <li>• Cruise/Boat/Jetty in charge</li> <li>• Security Guards &amp; Drivers</li> </ul>	<ul style="list-style-type: none"> <li>• Workforce is trained, but it generally lacks support skills and experience required in the workplace</li> <li>• Focus required on communication skills/public relations; reporting skills; administration skills and financial skills</li> <li>• For staff engaged in back end processing knowledge of transaction processing software and cash management is desirable</li> <li>• Life skills training required for drivers</li> </ul>

## Fisheries

In Mumbai, most of the good quality fish caught by fishermen are bought by suppliers (agents of exporters and middlemen) or auctioneer (agents of suppliers) at a very cheap rate. The suppliers in turn sell it to third parties who do sorting, grading etc. The third parties in turn sell it to exporters. Fishermen mostly do not get a fair price for their catch. Training programmes that focus on hygiene and value will assist the fishing community in marketing their catch and in getting a fair price for their produce. This sector also offers opportunities in marine food processing units.

The matrix below captures the jobs roles that are high in demand:

Fisheries	Findings
-----------	----------

<ul style="list-style-type: none"> <li>• Fishermen with value addition skills</li> <li>• Cold Storage Technician</li> <li>• Engine Mechanic</li> <li>• Grading supervisor</li> <li>• De-heading supervisor</li> <li>• Packers</li> <li>• Packaging Supervisor</li> <li>• Freezer Operator</li> </ul>	<ul style="list-style-type: none"> <li>• Fishing communities can hugely benefit from improved fisheries practices</li> <li>• Improved skills are particularly needed for hygiene and value addition of the catch</li> <li>• Trainings required for marketing of the produce</li> <li>• Demand for boat engine mechanics</li> </ul>
--	--

### *BSFI*

In Mumbai, BSFI is one of the most dominant sectors, employing a large workforce. However, in the next few years, automation of front end and back end processes will impact manual jobs in this sector.

The matrix below captures the jobs roles that are high in demand:

<b>Job Roles: BSFI</b>	<b>Findings</b>
<ul style="list-style-type: none"> <li>• Teller</li> <li>• Value banker</li> <li>• Debt recovery agent</li> <li>• Insurance agents</li> </ul>	<ul style="list-style-type: none"> <li>• Focus required on language skills</li> <li>• Up-skilling (technology and business skills) will be important</li> <li>• Automation and software could render many lower skilled customer service roles obsolete</li> </ul>

### *Retail and Apparel*

The retail and apparel sector will see increasing reliance on designing software and automation of inventory management processes.

The matrix below captures the jobs roles that are high in demand:

<b>Job Roles: Retail and Apparel</b>	<b>Findings</b>
<ul style="list-style-type: none"> <li>• Designers</li> <li>• Merchandisers</li> <li>• Tailors</li> <li>• Press Man</li> <li>• Checker</li> <li>• Accountant</li> <li>• Customer Service Associate</li> <li>• Cashier</li> <li>• Tele callers</li> </ul>	<ul style="list-style-type: none"> <li>• Focus required on training the workforce in using the designing software</li> <li>• Automation and software could render many lower skilled customer designing and production roles obsolete</li> <li>• Focus required on communication skills/public relations, administration skills and financial skills</li> </ul>



---

## **3. District Action Plan**

### **3.1. Background**

An actionable roadmap is one of the deliverables to be submitted to MoS for implementing skill training programmes in each of the districts. To develop these District specific plans, the team has mapped the emerging skilling opportunities across the 21 districts. Further, similar training opportunities or training requirements from the same sector have been clubbed in to one programme to ensure optimal use of resources and to build economies of scale for delivery partners. This has been proposed to improve the chances of developing and proposing feasible and viable training delivery models.

Further, the team has also estimated the broad capital and operational expenditure expected to be incurred in operationalizing the training initiatives in the districts. Apart from this, critical operational aspects such as training delivery mechanisms, availability of curriculum and employers have also been explored. The current status of these critical aspects will help ascertain the feasibility of initiating these trainings immediately and assess the gaps that need to be bridged before these training can be rolled out.

### **3.2. Objective of developing the plan**

The District action plans have been developed with an overall objective of providing a step by step skill implementation plan to the Ministry of Shipping in the 21 coastal districts. The specific objectives include the following:

- Mapping various skilling opportunities available in the district, keeping in mind the requirements of Port led development and emergence of CEZs.
- Mapping the current status of various pre-requisites such as availability of qualifications, curriculum, funding for training, potential training delivery partners, availability of assessors and certification processes and institutions for the training programmes.
- Identify the potential/target beneficiaries for the training courses.
- Map the infrastructure and the investment that may be required to deliver the training programmes in the district.
- Provide an estimate of the investment required to create/hire the skilling infrastructure.
- Provide a step by step action plan for MoS to implement the skilling initiatives.

### **3.3. Methodology**

Stakeholder consultations<sup>19</sup> that were held at national, state and district level and that included stakeholders from government, industries, associations, and private firms. A separate plan has been prepared for each of the 21 district. The plan has been divided into several sections and include sections on training delivery, potential partners, and investments. The investments component has been divided into two broad heads: capital expenditure and operational expenditure. Capital expenditure has only been proposed in cases in which there were very limited possibilities of using existing institutional framework for partnership and for using existing infrastructure and equipment. Operational expenditure includes the cost of the running the training programmes including the salary of the instructors. The common cost norms are the basis of calculating the operational expenditure. Capital expenditure has been worked out bearing in mind the infrastructure requirements of the programme and duration of training programmes. Wherever, feasible partnership with existing programmes such as DDU-GKY and PMKVY has been suggested in the plan.

---

<sup>19</sup> Roughly 700 primary consultations informed the development of these plans for 21 districts

### 3.1. Summary for Raigad

Sl. No.	Project Name	Job Roles	Type of training	No. of people to be trained
1	Skill Development Centre for Ports and Logistics	Truck and heavy vehicle operators, Crane operators, Truck Drivers-cum-Hazardous Materials Handler, Surveyors	Fresh and Upskilling	6,000 persons in next 5 years
2	Incubation and entrepreneurship center for idol making and consumer goods In Pen Taluka	Artisan and Maker of Goods	Fresh	2,250 persons in next 5 years
3	Fisheries and sea food processing	Aquaculture/ Mariculture Technicians, Brackish water aquaculture farmer, Ornamental fish culture technician	Fresh and Upskilling	1,500 persons in next 5 years
4	Trainings in manufacturing and construction	Electrician, Mechanics, Plumber, Fitter, Motor Binder, Fabricator, Mason, carpenter, bar bender, supervisor, land surveyor, scaffolder	Fresh and Upskilling	3,500 persons in next 5 years
5	Trainings for job roles emerging in Smart City	Solar panel installation technician and Solar panel maintenance technician, Solid waste management technician	Fresh	750 persons in next 5 years

### 3.2. Action Plan for Raigad

<b>Project 1: Skill Development Center for Ports and Logistics</b>	
Key economic drivers	<ul style="list-style-type: none"> <li>One major port – JNPT</li> <li>Two minor ports – Dighi and Dharamtar</li> <li>Development of a new terminal (4<sup>th</sup> terminal) at JNPT</li> <li>Development of a multi-product port based SEZ</li> <li>Existing industrial cluster (Taloja Industrial Cluster) catering to pharma, glass and chemical industries</li> <li>Projects such as DMIC</li> </ul>
Rationale for a Training Center	Ports and associated logistics service providers such as the CFS, transport operators, custom houses, survey agencies etc. are located in close proximity. There are about 32 CFS operators with employees ranging from 150 to 300 employees around JNPTC. Further, the port and the allied service providers have been provided with land by CIDCO, which was claimed from the local communities. Thus, the CFS and other operators have to offer employment to the project affected communities. Considering that there is a cluster of employers and potential beneficiaries available in close proximity in the district, MoS can explore the opportunity for establishing a Center for Excellence in Ports and Maritime sector.

Trainings		Training courses	Target Beneficiaries	Type of Trainings	Total Number of beneficiaries
		Truck and heavy vehicle operators	<ul style="list-style-type: none"> <li>Existing Truckers</li> <li>Coastal communities</li> </ul>	Upskilling	1,500 in next 5 year
				Fresh Training	1,000 in next 5 years
		Crane operators	<ul style="list-style-type: none"> <li>Existing Truckers</li> <li>Coastal communities</li> </ul>	Upskilling	500 in next 5 years
				Fresh Training	1,000 in next 5 years
		Handling hazardous cargo	<ul style="list-style-type: none"> <li>Existing crane operators</li> <li>Project Affected People</li> <li>Coastal communities</li> </ul>	Upskilling	500 in next 5 years
				Fresh Training	750 in next 5 years
Surveyors	<ul style="list-style-type: none"> <li>Coastal communities</li> </ul>	Fresh Training	750 in next 5 years		
Availability of curriculum	Job Roles	Target Groups	Available QP/NOS	MES	CTS
	Truck and heavy vehicle operators	Truck Drivers	<ul style="list-style-type: none"> <li>Reach Truck Operator</li> </ul>	Course available for: <ul style="list-style-type: none"> <li>Driver HMV</li> <li>Driver LMV</li> </ul>	No course available
	Crane operators	Crane operators	QP available for: <ul style="list-style-type: none"> <li>Crawler crane operator</li> <li>Hydra crane operator</li> <li>Tyre mounted crane operator</li> <li>Junior crane operator</li> <li>Overhead crane operator</li> </ul>	Course available for: <ul style="list-style-type: none"> <li>Truck Mounted/Crawler/Rough Terrain Crane Operator</li> </ul>	No course available
	Handling hazardous cargo	Truck Drivers-cum-Hazardous Materials Handler	<ul style="list-style-type: none"> <li>QP does not exist</li> </ul>	No course available	No course available
	Surveyors	Surveyors	QP available for: <ul style="list-style-type: none"> <li>Warehouse Supervisor</li> <li>Warehouse Quality Checker</li> <li>Warehouse Claims Coordinator</li> <li>Consignment Booking Assistant</li> </ul>	No course available	No course available

		<ul style="list-style-type: none"> <li>• Shipment Classification Agent</li> <li>• Clearance Support Agent</li> </ul>	
Investment (INR In lakhs)	<b>Truck and heavy vehicle operators</b>		
	Operational Expenditure		243
	<b>Crane operators</b>		
	Operational Expenditure		182
	<b>Handling hazardous cargo</b>		
	Operational Expenditure		144
	<b>Surveyors</b>		
	Operational Expenditure		114
	<b>Total Operational Expenditure</b>		<b>683</b>
	<b>Capital Expenditure for training centre<sup>20</sup></b>		<b>1050</b>
Potential Partners	<b>Partner</b>	<b>Areas of Support</b>	
	Maharashtra State Skill Development Society	<ul style="list-style-type: none"> <li>• Nodal agency for overall implementation and execution of the program</li> </ul>	
	Jawaharlal Nehru Port Trust	<ul style="list-style-type: none"> <li>• Space and infrastructure for establishing the training center</li> <li>• Access to port facilities for practical training</li> <li>• Guest faculty</li> <li>• Input for designing curriculum</li> <li>• Provision of used equipment for training</li> <li>• Facilitate implementation of RPL for existing work force</li> <li>• Provide guest faculty and facilitate on the job training</li> </ul>	
	Industry Associations (Taloja Industry Association)	<ul style="list-style-type: none"> <li>• Industry interface</li> <li>• On the job training</li> <li>• Facilitate implementation of RPL for existing workforce</li> </ul>	
	Training Partner (JNPT/TSP)	<ul style="list-style-type: none"> <li>• Training delivery</li> <li>• Co-management of the training facility</li> </ul>	
Logistic Sector Skill Council	<ul style="list-style-type: none"> <li>• Development of QPs for the identified job roles</li> <li>• Develop model training programmes for the identified Job Roles</li> <li>• Identification and certification of Trainers</li> <li>• Identification and certification of assessors</li> <li>• Assessment of trainees</li> <li>• Certification of Trainees</li> </ul>		
Training Delivery	<p><b>Option 1</b></p> <ul style="list-style-type: none"> <li>• JNPTC or MoS creates the training facility</li> <li>• Training facility to be managed and maintained by JNPTC or MoS</li> <li>• JNPT to deliver the training and provide qualified trainers and mobilize trainees</li> </ul> <p><b>Option 2</b></p> <ul style="list-style-type: none"> <li>• Private training provider to rent/develop the training facility and deliver the training programme</li> </ul>		

<sup>20</sup> The cost of procuring three crane stimulators and ten truck stimulators.

## Work Plan

Port and Logistics	in Months								
	1	2	3	4	5	6	7	8	9
Partnership with SSC, Industry Partners and Knowledge partners									
Development of QPs									
Establishment of Training infrastructure and facility									
Furnishing of the training centre									
Purchase and installation of lab equipment									
Appointment of staff members (instructors, counsellors, mobilization in-charge, placement officers, administrative staff etc.)									
Mobilization of prospective trainees									
Enrolment of students									
Roll-out of training programme									

Project 2: Incubation and entrepreneurship center for idol making and consumer goods In Pen Taluka					
Key economic drivers		<ul style="list-style-type: none"> <li>Pen taluka in Raigad is one of the most popular talukas throughout the country for producing world class Ganesh idols</li> <li>Demand for Ganesh idols</li> <li>Potential for making other idols and handicrafts in lean season</li> <li>Potential demand for goods such as soaps, phenol, broom sticks, which could be locally sourced by the large number of firms located in JNPT area and industrial areas such as Taloja</li> </ul>			
Rationale		<p>Pen Taluka has a cluster of artisans that are into Ganesh idol making. These artisans supply Ganesh idols both within and outside the country. However, there is a lean season associated with the trade, as Ganesh idols are more in demand in during the Ganesh Chaturthi festivities. Further, the idol makers need support in exploring other markets both internationally and nationally. An incubation center will help these idol makers in innovating in idol making and related fields. Specific inputs on packaging, managing supply chain, use of environment friendly dyes, Export/import norms and improved designs can be provided through the center. Further, input on entrepreneurship be provided to the community members interested in establishing small enterprises. This will include inputs on business planning, market linkages and bank linkages.</p>			
Trainings		<b>Training courses</b>	<b>Target Beneficiaries</b>	<b>Type of Trainings</b>	<b>Total Number of beneficiaries</b>
		Idol making	<ul style="list-style-type: none"> <li>Existing idol making workforce</li> </ul>	Upskilling Fresh Training	- 1,000 persons in next 5 years
		Consumer goods	<ul style="list-style-type: none"> <li>Unemployed women</li> </ul>	Upskilling Fresh Training	- 1,250 persons in next 5 years
Availability of curriculum	<b>Job Roles</b>	<b>Target groups</b>	<b>Available QP/NOS</b>	<b>MES</b>	<b>CTS</b>
	Artisan	Artisan	QP available for: <ul style="list-style-type: none"> <li>Artisans</li> </ul>	No course available	No course available

	Makers of goods <sup>21</sup>	Women from local community	QP does not exist	No course available	No course available
Investment (INR In lakhs)	<b>Incubation and training centre</b>				
	<b>Idol making</b>				
	Operational Expenditure				152
	<b>Consumer goods</b>				
	Operational Expenditure				190
	<b>Total Operational Expenditure</b>				<b>342</b>
	Capital Expenditure <sup>22</sup>				51
Potential Partners	<b>Partner</b>		<b>Areas of Support</b>		
	Maharashtra State Skill Development Society		<ul style="list-style-type: none"> <li>• Nodal agency for overall implementation and execution of the program</li> </ul>		
	MSME		<ul style="list-style-type: none"> <li>• Space and infrastructure for establishing the incubation and training center</li> <li>• Management of the incubation centre</li> <li>• Foster innovations in idol making and consumer goods</li> <li>• Guest faculty</li> <li>• Provision of used equipment for training</li> </ul>		
	NID		<ul style="list-style-type: none"> <li>• Input for designing curriculum for idol making</li> </ul>		
	Industry Associations (Handicrafts and Retail)		<ul style="list-style-type: none"> <li>• Support marketing of the idols</li> <li>• Facilitate establishing the retail network for sourcing of idols to the retail outlets</li> </ul>		
	Industry Associations (CFSS)		<ul style="list-style-type: none"> <li>• Facilitate sourcing of consumer goods produced by the trained graduates</li> </ul>		
	Training Partner		<ul style="list-style-type: none"> <li>• Training delivery</li> <li>• Co-management of the training facility</li> </ul>		
	Nodal Banks		<ul style="list-style-type: none"> <li>• Promote bank linkages</li> <li>• Introduce youth to various entrepreneurial schemes</li> </ul>		
	Handicraft Sector Skill Council		<ul style="list-style-type: none"> <li>• Develop model training programmes for the identified job roles</li> <li>• Identification and certification of Trainers</li> <li>• Identification and certification of assessors</li> <li>• Assessment of trainees</li> <li>• Certification of trainees</li> </ul>		
Training Delivery	<ul style="list-style-type: none"> <li>• MoS to support MSME in setting up the incubation centre; the centre will be run by MSME</li> <li>• MoS and MSME could fund the training</li> <li>• The empaneled TSP that could be from DDU-GKY, PMKVY or RSETI and empaneled/shortlisted by MSSDS</li> </ul>				

### Work Plan

Handicraft	in Months					
	1	2	3	4	5	6
TSP Affiliation						
Incubation centre setup						

<sup>21</sup> Soap, phenyl, and broom sticks

<sup>22</sup> Includes the cost of building the incubation centre

Handicraft	in Months					
	1	2	3	4	5	6
Appointment of additional staff members						
Mobilization of prospective trainees						
Enrolment of trainees						
Roll-out of incubation centre and training programme						

Project 3: Fisheries and sea food processing					
Key economic drivers	<ul style="list-style-type: none"> <li>Huge tracts of land parcels that are available and could be used for aqua-culture and mariculture</li> <li>Huge demand for shrimps, crabs, and ornamental fish</li> <li>Processing and exports of shrimps</li> </ul>				
Rationale	<p>In Raigad, people have land holdings that could be used for aquaculture and mariculture. Trainings imparted in aquaculture could help in providing the fishing community an insight into a more profitable way of doing business and also to make proper utilization of unutilized land parcels that are unfit for agriculture. There is a huge demand for shrimps and crabs; and high quality produce could be exported. People could be trained per year by the Department of Fisheries and on completion of training a certificate could be issued. Such certification will help them to get loans from the banks to engage/ venture into self-employment prospects.</p>				
Trainings	<b>Training courses</b>	<b>Target Beneficiaries</b>	<b>Type of Trainings</b>	<b>Total Number of beneficiaries</b>	
	Aquaculture & Mariculture	<ul style="list-style-type: none"> <li>Existing workforce engaged in fishery</li> <li>Coastal communities</li> </ul>	Upskilling	500 persons in next 5 years	
			Fresh Training	500 persons in next 5 years	
	Ornamental fish culture	<ul style="list-style-type: none"> <li>Existing workforce engaged in fishery</li> <li>Coastal communities</li> </ul>	Upskilling	250 persons in next 5 years	
Fresh Training			250 persons in next 5 years		
Availability of curriculum	<b>Job Roles</b>	<b>Target groups</b>	<b>Available QP/NOS</b>	<b>MES</b>	<b>CTS</b>
	<b>Aquaculture/ Mariculture Technicians</b>	Fishermen community Unemployed youth	QP available for: <ul style="list-style-type: none"> <li>Aquaculture technician</li> <li>Aquaculture worker</li> <li>Brackish water aquaculture farmer</li> <li>Mariculture operator</li> <li>Shrimp farmer</li> </ul>	No course available	No course available
	<b>Brackish water aquaculture farmer</b>	Fishermen community Unemployed youth	QP available for: <ul style="list-style-type: none"> <li>Aquaculture technician</li> <li>Aquaculture worker</li> <li>Freshwater aquaculture farmer</li> </ul>	No course available	No course available
Investment (INR In lakhs)	<b>Incubation and training centre</b>				
	Aquaculture & Mariculture				
	Operational Expenditure				106
	Ornamental fish culture				
Operational Expenditure				53	

	<b>Total Operational Expenditure</b>	<b>159</b>
	Capital Expenditure <sup>23</sup>	45
Potential Partners	<b>Partner</b>	<b>Areas of Support</b>
	Maharashtra State Skill Development Society	<ul style="list-style-type: none"> <li>• Nodal agency for overall implementation and execution of the program</li> </ul>
	Raigad Fishery Training Institute	<ul style="list-style-type: none"> <li>• Provide infrastructure for training</li> <li>• Training delivery</li> <li>• Support in setting up/scaling up the training centre as per the required SSC norms</li> <li>• Provide faculty members</li> <li>• Integrate the proposed trainings in its training plan</li> </ul>
	Central Marine Research Institute	<ul style="list-style-type: none"> <li>• Input for designing the curriculum</li> <li>• Guest faculty</li> </ul>
	Industry Associations (Shrimp)	<ul style="list-style-type: none"> <li>• Industry interface</li> <li>• Facilitate sourcing of shrimps to different export houses</li> </ul>
	Agriculture Sector Skill Council	<ul style="list-style-type: none"> <li>• Develop model training programmes for the identified Job Roles</li> <li>• Identification and certification of Trainers</li> <li>• Identification and certification of assessors</li> <li>• Assessment of trainees</li> <li>• Certification of Trainees</li> </ul>
Training Delivery	<ul style="list-style-type: none"> <li>• Raigad Fishery Training Institute will provide the infrastructure and deliver the training programmes</li> <li>• Agriculture Sector Skill Council will certify the training programmes</li> <li>• Department of Fisheries and MoS could fund the training</li> </ul> <p><b>Option 1</b></p> <ul style="list-style-type: none"> <li>• Build the residential facility for the trainees</li> </ul> <p><b>Option 2</b></p> <ul style="list-style-type: none"> <li>• Lease the residential facility for the trainees</li> </ul>	

### Work Plan

Fisheries	in Months					
	1	2	3	4	5	6
Upgradation of training centre						
Affiliation of Training centre with ASCI						
Initiation of residential facility construction work						
Purchase of consumables						
Appointment of additional staff members						
Mobilization of prospective trainees						
Enrolment of students						
Roll-out of training programme						

<sup>23</sup> The cost of building the residential facility



<b>Project 4: Trainings in manufacturing and construction</b>					
Key economic drivers		<ul style="list-style-type: none"> <li>Manufacturing and industrial hubs</li> <li>Industrial areas such as Taloja has close to 900 firms and has a turnover of more than INR 75,000 cr</li> <li>Industrial development (DMIC and chemical industry cluster), infrastructure development (CIDCO projects on Railways and Metro), and Smart City Projects: NAINA, CIDCO Navi Mumbai (South) – Brownfield and Pushpak Nagar – Greenfield</li> </ul>			
Rationale		<p>Industrial areas located in Raigad district and associations such as Taloja Manufacturing Association demand skilled workforce. Taloja Manufacturing Association consists of about 975 industrial units and provides employment to over 1.25 lakh people. The turnover of the association amounts to INR 75,000 crore and engages in economic activities in a wide range of sectors including Pharmaceuticals, Petrochemicals, Tools &amp; Dyes, Plastics, Glass, Rubber and Chemicals. The training centre could provide training in jobs roles that are of high demand among the industries in and around the local geography. Job roles such as electrician, plumber, motor binder, and fabricator are the most common vocations in which training could be provided.</p> <p>The CIDCO projects that are lined up in Navi Mumbai and Raigad and the upcoming Smart City Project will witness a large volume of construction works in the form of roads, railways, airports, etc. Therefore, there will be a huge requirement of skilled workforce in the construction sector.</p>			
Trainings		<b>Training courses</b>	<b>Target Beneficiaries</b>	<b>Type of Trainings</b>	<b>Total Number of beneficiaries</b>
		Skilling of Entry Level Workforce in Manufacturing Sector	<ul style="list-style-type: none"> <li>Existing workforce engaged in manufacturing sector</li> <li>Coastal communities</li> </ul>	Upskilling	2,500 persons in next 5 years
				Fresh Training	
		Skilling for Construction Workers of Infrastructural Facilities	<ul style="list-style-type: none"> <li>Existing workforce engaged in construction sector</li> <li>Coastal communities</li> </ul>	Upskilling	1000 persons in next 5 years
				Fresh Training	
Availability of curriculum	<b>Job Roles</b>	<b>Target groups</b>	<b>Available QP/NOS</b>	<b>MES</b>	<b>CTS</b>
	Electrician, Mechanic, Plumber, Fitter, Motor Binder, Fabricator	<ul style="list-style-type: none"> <li>Potential workforce willing to get engaged in manufacturing sector</li> </ul>	QP available for: <ul style="list-style-type: none"> <li>Electrician, Mechanic, Plumber, Fitter, Motor Binder, Fabricator</li> </ul>	Course available for Electrician, Mechanic, Plumber, Fitter, Motor Binder, Fabricator	Course available for Electrician, Mechanic, Plumber, Fitter, Motor Binder, Fabricator

	Mason, carpenter, bar bender, supervisor, land surveyor, scaffolder	<ul style="list-style-type: none"> <li>Potential workforce willing to get engaged in construction sector</li> </ul>	QP available for: <ul style="list-style-type: none"> <li>Mason, carpenter, bar bender, supervisor, land surveyor, scaffolder</li> </ul>	Course available for mason, carpenter, bar bender, supervisor, scaffolder	Course available for mason, carpenter, bar bender, supervisor, scaffolder
Investment (INR In lakhs)	<b>Training centre for skilling in manufacturing and construction sector</b>				
	Skilling of Entry Level Workforce in Manufacturing Sector				
	Operational Expenditure				380
	Skilling for Construction Workers of Infrastructural Facilities				
	Operational Expenditure				152
	<b>Total Operational Expenditure</b>				<b>532</b>
Potential Partners	<b>Partner</b>	<b>Areas of Support</b>			
	Maharashtra State Skill Development Society	<ul style="list-style-type: none"> <li>Nodal agency for overall implementation and execution of the program</li> </ul>			
	Training Partner	<ul style="list-style-type: none"> <li>Provide infrastructure for training</li> <li>Training delivery</li> </ul>			
	Industry Associations (Taloja Association)	<ul style="list-style-type: none"> <li>Industry interface</li> <li>Facilitate On-Job-Training</li> <li>Facilitate in identifying the firms that could recruit the trained graduates in Taloja</li> </ul>			
	Industry partner (Deepak Fertilizer and Chemical Limited)	<ul style="list-style-type: none"> <li>Provide inputs in curriculum design</li> </ul>			
	Industry Associations (CIDCO)	<ul style="list-style-type: none"> <li>Industry interface</li> <li>Facilitate On-Job-Training</li> <li>Facilitate in identifying the firms that could recruit the trained graduates in Raigad</li> </ul>			
	Plumbing Sector Skill Council Automotive Sector Skill Council Construction Skill Development Council of India	<ul style="list-style-type: none"> <li>Develop model training programmes for the identified Job Roles</li> <li>Identification and certification of Trainers</li> <li>Identification and certification of assessors</li> <li>Assessment of trainees</li> <li>Certification of Trainees</li> </ul>			
Training Delivery	<ul style="list-style-type: none"> <li>Engage a TSP that is affiliated with DDU-GKY and PMKVY and empaneled/shortlisted by MSSDS to deliver the training</li> <li>Construction sites/manufacturing units where the trainee is already working can be the RPL site for training.</li> </ul>				

### Work Plan

Manufacturing and construction	in Months					
	1	2	3	4	5	6
TSP empanelment						
SSC affiliation						
Training centre setup						

Manufacturing and construction	in Months					
	1	2	3	4	5	6
mobilization of prospective trainees						
Enrolment of trainees						
Roll-out of training programme						

Project 5: Trainings for job roles emerging in Smart City					
Key economic drivers	<ul style="list-style-type: none"> <li>Smart City Projects: NAINA, CIDCO Navi Mumbai (South) – Brownfield and Pushpak Nagar – Greenfield</li> </ul>				
Trainings	<b>Training courses</b>	<b>Target Beneficiaries</b>	<b>Type of Trainings</b>	<b>Total Number of beneficiaries</b>	
	Production of renewable energy	<ul style="list-style-type: none"> <li>Coastal communities</li> </ul>	Upskilling	-	
			Fresh Training	500 in next 5 years	
	Solid waste management	<ul style="list-style-type: none"> <li>Coastal communities</li> </ul>	Upskilling	-	
Fresh Training			250 in next 5 years		
<b>Rationale</b>	Smart cities that are lined up in Raigad and Navi Mumbai will demand skilled workforce that will be able to use smart technologies in not only building the smart cities but also maintaining them. There will be demand for workforce that could work in renewable energy and waste management domain.				
Availability of curriculum	<b>Job Roles</b>	<b>Target groups</b>	<b>Available QP/NOS</b>	<b>MES</b>	<b>CTS</b>
	Solar panel installation technician and Solar panel maintenance technician	<ul style="list-style-type: none"> <li>Youth interested in renewable energy domain</li> </ul>	QP available for: <ul style="list-style-type: none"> <li>Solar PV Installer - Civil</li> <li>Solar PV Installer - Electrical</li> <li>Solar PV Installer (Suryamitra)</li> </ul>	Course available for Solar electric System Installer & Service Provider, Solar Hot Water system installer, Assistant Solar PV Technician, Solar PV Technician	No course available
	Solid waste management technician	<ul style="list-style-type: none"> <li>Youth interested in waste management domain</li> </ul>	QP available for: <ul style="list-style-type: none"> <li>Wastewater Treatment Plant Helper</li> <li>Wastewater Treatment Plant Technician</li> </ul>	No course available	No course available
Investment (INR In lakhs)	<b>Training centre for skilling for Smart Cities</b>				
	Skilling of Entry Level Workforce in Manufacturing Sector				
	Operational Expenditure				
	Skilling for Construction Workers of Infrastructural Facilities				76

	Operational Expenditure	38
	<b>Total Operational Expenditure</b>	<b>114</b>
Potential Partners	<b>Partner</b>	<b>Areas of Support</b>
	Maharashtra State Skill Development Society	<ul style="list-style-type: none"> <li>• Nodal agency for overall implementation and execution of the program</li> </ul>
	Training Partner	<ul style="list-style-type: none"> <li>• Provide infrastructure for training</li> <li>• Training delivery</li> </ul>
	Industry Associations (CIDCO)	<ul style="list-style-type: none"> <li>• Industry interface</li> <li>• Facilitate On-Job-Training</li> <li>• Facilitate in identifying the firms that could recruit the trained graduates in Raigad</li> </ul>
	Green Jobs Skill Council	<ul style="list-style-type: none"> <li>• Develop model training programmes for the identified Job Roles</li> <li>• Identification and certification of Trainers</li> <li>• Identification and certification of assessors</li> <li>• Assessment of trainees</li> <li>• Certification of Trainees</li> </ul>
Training Delivery	<ul style="list-style-type: none"> <li>• Engage a TSP affiliated with DDU-GKY and PMKVY and empaneled /shortlisted by MSSDS to deliver the training</li> <li>• Ministry of New and Renewable Energy could fund the training</li> </ul>	

### Work Plan

Smart City	in Months					
	1	2	3	4	5	6
TSP empanelment						
SSC affiliation						
Training centre setup						
mobilization of prospective trainees						
Enrolment of trainees						
Roll-out of training programme						

### 3.4. Summary for Mumbai

SN	Project Name	Job Roles	Type of training	No. of people to be trained
1	Skill Development Centre for Ports and Logistics	Ship Crane operator, Mobile crane operator, Wharf crane operator, Surveyors	Fresh and RPL	3,500 persons in next 5 years
2	Skill Development in tourism and hospitality Sector	Taxi Driver, Tour Operator, Tourism Police, Cruise ship-Chefs, housekeeping, engine operator	Fresh and RPL	3,800 persons in next 5 years
3	Skill Development Centre for Infrastructure and Construction Training	Tippers, Bulldozers, Excavators, pavers, Mason, Bar bender, shuttering carpenter	Fresh and RPL	3,250 persons in next 5 years
4	Skill Development Center for Fishing	Sorters, fish handling, spotters (Pagi), Mechanics, fish handlers, Technician, Operators	Fresh and RPL	4,550 persons in next 5 years

### 3.5. Action Plan for Mumbai

<b>Project 1: Skill Development Center for Ports and Logistics Sector</b>					
Key economic drivers		<ul style="list-style-type: none"> <li>• One major port – MbPT</li> <li>• Construction of fifth oil berth at the project cost is INR 811 Cr.</li> <li>• An MoU for the Allotment of dedicated anchorage to Tata Power project cost is INR 60 Cr</li> <li>• Sassoon dock renovation plan 52.19 Cr.</li> </ul>			
Rationale		<p>Truckers are in short supply to move the containers and goods to and fro from the port site. Thus truckers’ training for logistics sector can be taken up to supply professionally trained drivers. Further, an RPL can be planned for the existing Trucker workforce. The RPL can be run at the CFS/Port locations where the terminal operators can chip in with the necessary clearances required for smooth movement of goods.</p> <p>Since there is a high cost involved in training of crane operators, mainly because of cost of equipment’s, so very less numbers of private players will be interested. As a result we need to setup a skill development center in the nearby premises of Mumbai Port Trust (MbPT) to cater to the needs of the crane operators. An ideal training premise would have 8000 sq. ft. built up area where 3 simulators can be installed for crane operators training. In addition to this, the premises can be utilized for training of job roles like Truck Drivers and Surveyors which are also in high demand. Since the center will be located near the port premises this will also help in ease of access for Project affected people which will help in increasing their chances of gaining meaningful employment.</p> <p>Ship Crane certification course can be started for crane operators who operate ship crane, mobile cranes and wharf cranes. These job roles have been identified as high demand and most of the stakeholders in port &amp; marine sector have indicated that they always find it difficult to recruit trained workforce for operating these machines as they don’t get qualified candidates. The training could be delivered for 24 weeks, with a special module on practical operation of the machine. The training should comprise of both theoretical and practical aspects, with more focus on practical training.</p>			
Trainings		<b>Trainin g courses</b>	<b>Target Beneficiaries</b>	<b>Type of Trainings</b>	<b>Total Number of beneficiarie s</b>
		Training for operating cranes	<ul style="list-style-type: none"> <li>• Existing Crane operators</li> <li>• Unemployed Youth</li> <li>• Diploma Engineers</li> </ul>	Upskilling	150 persons in the next 5 year
				Fresh Training	100 persons in next 5 years
		Truckers /Trailer Operators	<ul style="list-style-type: none"> <li>• Existing Truckers</li> <li>• Unemployed youth</li> </ul>	Upskilling	1,500 persons in next 5 years
				Fresh Training	1,000 persons in next 5 years
		Surveyors	<ul style="list-style-type: none"> <li>• Coastal communities</li> </ul>	Fresh Training	750 persons in next 5 years
Availability of curriculum	<b>Job Role</b>	<b>Target Groups</b>	<b>Available QP/NOS</b>	<b>MES</b>	<b>CTS</b>
	<ul style="list-style-type: none"> <li>• Ship Crane</li> </ul>	Ship Crane Operators,	QP available for:	<ul style="list-style-type: none"> <li>• Crane Operator</li> </ul>	Not Available

	operator • Mobile crane operator • Wharf crane operator	Mobile Crane Operator and Wharf Crane Operator	<ul style="list-style-type: none"> <li>• Crawler crane operator</li> <li>• Hydra crane operator</li> <li>• Tyre mounted crane operator</li> <li>• Junior crane operator</li> <li>• Overhead crane operator</li> </ul>	<ul style="list-style-type: none"> <li>• Pick and Carry Crane Operator</li> <li>• Truck Mounted/Crawler/Rough Terrain Crane Operator</li> </ul>	
	Truckers /Trailer Operators	Truck Drivers	QP available for: <ul style="list-style-type: none"> <li>• Reach Truck Operator</li> </ul>	Course available for: <ul style="list-style-type: none"> <li>• Driver HMV</li> <li>• Driver LMV</li> </ul>	Not Available
	Surveyors	Surveyors	QP available for: <ul style="list-style-type: none"> <li>• Warehouse Supervisor</li> <li>• Warehouse Quality Checker</li> <li>• Warehouse Claims Coordinator</li> <li>• Consignment Booking Assistant</li> <li>• Shipment Classification Agent</li> </ul> Clearance Support Agent	No course available	No course available
Investment (INR In lakhs)	<b>Training for operating cranes</b>				
	Operational Expenditure				24
	<b>Training for Truckers</b>				
	Operational Expenditure				243
	<b>Training for Surveyors</b>				
	Operational Expenditure				114
	<b>Total Operational Expenditure</b>				381
	<b>Total Capital Expenditure</b>				400
Potential Partners	<b>Partner</b>		<b>Areas of Support</b>		
	Maharashtra State Skill Development Society		<ul style="list-style-type: none"> <li>• Nodal agency for overall implementation and execution of the program</li> </ul>		
	Port or Terminal Operators		<ul style="list-style-type: none"> <li>• Providing Equipment</li> <li>• Space and infrastructure for establishing the training center</li> <li>• Access to port facilities for practical training</li> <li>• Guest faculty</li> <li>• Input for designing curriculum</li> <li>• Provision of used equipment for training</li> <li>• Facilitate implementation of RPL for existing work force</li> </ul>		

	Driving Schools and Transportation Agencies	<ul style="list-style-type: none"> <li>• Providing Equipment and Infrastructure for training</li> <li>• Providing Trainers</li> </ul>
	Truckers Association	<ul style="list-style-type: none"> <li>• Facilitate implementation of RPL for existing workforce</li> </ul>
	Logistics SSC, Construction SSC	<ul style="list-style-type: none"> <li>• Develop model training programs</li> <li>• Identification and certification of Trainers</li> <li>• Identification and certification of assessors</li> <li>• Assessment of trainees</li> <li>• Certification of Trainees</li> </ul>
Training Delivery	<p><b>Terminal Operator to create the training facility for Crane Operator</b></p> <p><b>Option 1</b></p> <ul style="list-style-type: none"> <li>• MbPT or MoS create the training facility</li> <li>• Training facility to be managed and maintained by MbPT or MoS</li> <li>• Private training operator to provide qualified trainers and mobilize trainees</li> <li>• Private players to use the training facility to deliver training program</li> </ul> <p><b>Option 2</b></p> <ul style="list-style-type: none"> <li>• Private training provider to rent/develop the training facility</li> <li>• Private training provider to provide Trainers and other center management staff</li> </ul> <p><b>Driving Schools</b></p> <ul style="list-style-type: none"> <li>• Private training provider to rent/develop the training facility</li> <li>• Private training provider to provide Trainers and other center management staff</li> </ul>	

## Work Plan

Port and Logistics	in Months								
	1	2	3	4	5	6	7	8	9
Partnership with SSC, Industry Partners and Knowledge partners									
Development of QPs									
Establishment of Training infrastructure and facility									
Furnishing of the training centre									
Purchase and installation of lab equipment									
Appointment of staff members (instructors, counsellors, mobilization in-charge, placement officers, administrative staff etc.)									
Mobilization of prospective trainees									
Enrolment of students									
Roll-out of training programme									

<b>Project 2: Skill Development in tourism and hospitality Sector</b>	
Key economic drivers	<ul style="list-style-type: none"> <li>• Inflow of tourists coming to India</li> <li>• Being the financial capital of India, hospitality and business services have emerged as a strong economic drivers. Food retail chains, hotels and service providers to business establishments</li> <li>• Large scale investment planned in Tourism in Maharashtra</li> <li>• Development of Mumbai as a cruise shipping hub</li> </ul>
Rationale	Since tourism is one of the major growth drivers of Mumbai, therefore a lot of people come for both leisure and business travel. Also over a period of time



	<p>customers are grown accustomed to high quality service not only in terms of the way of speaking but also the way they handle the customers. In this regard it becomes necessary to provide basic hygiene training to the drivers so as to improve customer satisfaction. Similarly there is a need of enhanced safety at tourist places like beaches and other tourist spots particularly in the aftermath of attack on Taj Hotel, which has increased the sense of insecurity among the tourists.</p> <p>With the influx of tourist becoming more sophisticated it becomes very essential to provide them with all specialized services in areas like convenience w.r.t sightseeing and hassle free travel, this results in the demands of trained Tour Operators.</p> <p>The State Tourism department plans to promote cruise tourism in the near future. This will result in generating a demand for people who would be willing to work on ships as chefs, Housekeeping attendants, etc. At present, in order to work on ships, the person needs to be certified in modules like health and safety and promoting cruise tourism will result in generating the demand for job roles related to cruise operations and maintenance like engine operators, chefs, housekeepers, waiters, etc.</p>				
Trainings	<b>Training courses</b>	<b>Target Beneficiaries</b>	<b>Type of Trainings</b>	<b>Total Number of beneficiaries</b>	
	Training for Taxi Drivers	<ul style="list-style-type: none"> <li>Existing Taxi Driver</li> <li>Unemployed Youth</li> </ul>	Upskilling	1,500 persons in next 5 year	
			Fresh Training	1,000 persons in next 5 years	
	Training for Cruise Ship related job roles	<ul style="list-style-type: none"> <li>Unemployed Youth</li> </ul>	Fresh Training	300 persons in next 5 years	
Training for Tour Operators	<ul style="list-style-type: none"> <li>Tour Guide,</li> <li>Counter Sales Executives (Tickets)</li> <li>Travel Consultant</li> </ul>	Upskilling	1,000 persons in next 5 year		
Availability of curriculum	<b>Job Roles</b>	<b>Target Groups</b>	<b>QP/NOS</b>	<b>MES</b>	<b>CTS</b>
	Taxi Driver	<ul style="list-style-type: none"> <li>Truck Driver</li> </ul>	QP available for: <ul style="list-style-type: none"> <li>Taxi Driver</li> </ul>	<ul style="list-style-type: none"> <li>Driver HMV</li> </ul>	Not Available
	Tour Operator	<ul style="list-style-type: none"> <li>Tour Operator</li> </ul>	QP available for: <ul style="list-style-type: none"> <li>Tour Guide</li> </ul>	<ul style="list-style-type: none"> <li>Tour Agent and Travel Operator</li> <li>Tour Guide for International Tourist</li> <li>Tourism &amp; Travel Executive</li> </ul>	<ul style="list-style-type: none"> <li>Travel and Tour Assistant</li> </ul>
	Tourism Police	<ul style="list-style-type: none"> <li>Police</li> </ul>	Not Available	Not Available	Not Available
	Cruise ship- Chefs, housekeeping, engine operator, Fire	<ul style="list-style-type: none"> <li>Local Community members</li> </ul>	<ul style="list-style-type: none"> <li>Trainee Chef</li> <li>Commis Chef</li> <li>Tandoor Chef</li> </ul>	<ul style="list-style-type: none"> <li>Repair &amp; Overhauling of engine system</li> </ul>	<ul style="list-style-type: none"> <li>Pump Operator Cum Mechanic,</li> <li>Plumber</li> </ul>

	and rescuer etc.		<ul style="list-style-type: none"> <li>Winding Engine Operator</li> <li>Gas Engine Operator</li> <li>Helper Electrician</li> <li>Plumber,</li> <li>House Keeping Attendant</li> <li>Welder</li> </ul>	<ul style="list-style-type: none"> <li>Fire and Rescue Operator</li> <li>Arc and Gas Welder</li> <li>TIG Welder</li> <li>Electrician Domestic</li> </ul>	<ul style="list-style-type: none"> <li>Electrician,</li> <li>Mechanic</li> <li>Welder</li> </ul>
Investment (INR In lakhs)	<b>Training for Taxi Drivers</b>				
	Operational Expenditure				243
	<b>Training for Tour Operators</b>				
	Operational Expenditure				45
	<b>Training for Cruise Ships related job role</b>				
Operational Expenditure				60	
	<b>Total Operational Expenditure</b>				348
Potential Partners	<b>Partner</b>		<b>Areas of Support</b>		
	Maharashtra State Skill Development Society		<ul style="list-style-type: none"> <li>Nodal agency for overall implementation and execution of the program</li> </ul>		
	Driving Schools and Private Taxi Agencies, IITTM		<ul style="list-style-type: none"> <li>Input for designing curriculum</li> <li>Guest faculty</li> </ul>		
	Tourism SSC, Maharashtra Tourism Development Corporation		<ul style="list-style-type: none"> <li>Develop model training programs</li> <li>Identification and certification of Trainers</li> <li>Identification and certification of assessors</li> <li>Assessment of trainees</li> <li>Certification of Trainees</li> </ul>		
	Training Partner		<ul style="list-style-type: none"> <li>Provide the infrastructure and lab for training</li> <li>Training delivery</li> </ul>		
Training Delivery	<ul style="list-style-type: none"> <li>IITTM, NSDC Training Centers to deliver training for Tour Operators</li> <li>Driving Schools, NSDC Training Centers to deliver training for Taxi Operator</li> <li>IITTM or NSDC Training Centers to deliver training for Tourism Police</li> <li>The empaneled TSP that could be from DDU-GKY and PMKVY</li> </ul>				

## Work Plan

Tourism	in Months					
	1	2	3	4	5	6
Partnership between Maharashtra Tourism Development Corporation, Tourism SSC, IITTM for development and finalization of the curriculum						
Partnership between Driving schools and Tourism SSC for development and finalization of the curriculum						
Appointment of staff members (instructors, counsellors, mobilization in-charge, placement officers, administrative staff etc.)						

Mobilization of prospective trainees						
Enrolment of students						
Roll-out of training programme						

<b>Project 3: Skill Development Center for Infrastructure and Construction Training</b>					
Key economic drivers		<ul style="list-style-type: none"> <li>A number of new projects in proposed in Mumbai               <ul style="list-style-type: none"> <li>33.2 km Mumbai Coastal Road (INR 13,000 Cr)</li> <li>Mumbai Trans Harbour Link (MTHL) (INR 17,750 Cr)</li> <li>33.5 km Mumbai Metro Phase III, Cuffe Parade SEEPZ corridor (INR 23,136 Cr)</li> <li>18.5 km Dahisar to DN Nagar (INR 4,994 Cr),</li> <li>16.5 km Dahisar East to Andheri East (INR 4,737 Cr)</li> <li>NMIA –Phase INR 16,000 Cr</li> </ul> </li> <li>Construction and real estate are one of the key economic drivers in Mumbai</li> </ul>			
Rationale		<p>With coming up of large amount of investments in infrastructure sector in Mumbai, this will result in increase in demand of workers in constructions sectors in unskilled, semi-skilled and skilled category. As per stakeholder interaction it was evident that construction contractors have to give 3-6 months of OJT (On the Job Training). This results in increase in training cost. Even after the OJT, the person is still not fine-tuned with various scope of the work as the training is done in a whimsical basis and does not have a systematic methodology.</p> <p>So in order to provide sustainable employment, it is necessary that the person engaged in equipment handling should also have an understanding of other equipment, as well as finer details of the scope of work like coordinating with the supervisor, following the instructions, etc. The training will comprise of a mix of both theory and practical part, with major focus on practical training.</p> <p>Keeping in mind the above requirements, a need for dedicated Skill Development Centre in Infrastructure sector is felt. The proposed training centre would be of 8000 sq. ft capacity and will have 5 classrooms and 3 labs.</p>			
Trainings		<b>Training courses</b>	<b>Target Beneficiaries</b>	<b>Type of Trainings</b>	<b>Total Number of beneficiaries</b>
		Training for Infrastructure Equipment Operator like Tippers, Bulldozers, Excavators, pavers	<ul style="list-style-type: none"> <li>Existing Heavy Vehicle Operators</li> <li>Unemployed Youth</li> </ul>	Upskilling	250 persons in next 5 years
				Fresh Training	500 persons in next 5 years
		Training in Construction like Mason, Bar bender, shuttering carpenter	<ul style="list-style-type: none"> <li>Local People with a minimum qualification of Class 8</li> </ul>	Upskilling	1500 persons in 5 years
				Fresh Training	1000 persons in 5 years
Availability of curriculum	<b>Job Roles</b>	<b>Target Group</b>	<b>QP/NOS</b>	<b>MES</b>	<b>CTS</b>
	<ul style="list-style-type: none"> <li>Tippers, Bulldozers, Excavators, pavers</li> </ul>	<ul style="list-style-type: none"> <li>Tippers, Bulldozers, Excavators, pavers</li> </ul>	QP available for: <ul style="list-style-type: none"> <li>Tipper Operator</li> <li>Excavator Operator</li> <li>Bulldozer Operator</li> </ul>	Excavator Operator	Not Available

	Mason, Bar bender, shuttering carpenter	<ul style="list-style-type: none"> <li>• Mason, Bar bender, shuttering carpenter</li> </ul>	QP available for: <ul style="list-style-type: none"> <li>• Helper Mason</li> <li>• Helper Bar Bender</li> <li>• Shuttering Carpenter</li> </ul>	<ul style="list-style-type: none"> <li>• Mason</li> <li>• Assistant Bar Bender &amp; Steel Fixer</li> <li>• Assistant Shuttering Carpenter &amp; Scaffolder</li> </ul>	<ul style="list-style-type: none"> <li>• Mason</li> </ul>
Investment (INR In lakhs)	<b>Training for Infrastructure Equipment Operator</b>				
	Operational Expenditure				91
	<b>Training in Construction</b>				
	Operational Expenditure				243
<b>Total Operational Expenditure</b>				334	
Potential Partners	<b>Partner</b>		<b>Areas of Support</b>		
	Maharashtra State Skill Development Society		<ul style="list-style-type: none"> <li>• Nodal agency for overall implementation and execution of the program</li> </ul>		
	MMRDA, CIDCO		<ul style="list-style-type: none"> <li>• Providing Trainers</li> <li>• Providing technical expertise to Infrastructure and SCMS SSC</li> <li>• Coordinating with construction contractors for OJT</li> <li>• Industry interface</li> <li>• Facilitate in identifying the firms that could recruit the trained graduates in Mumbai</li> </ul>		
	Construction Contractors		<ul style="list-style-type: none"> <li>• Provide inputs in curriculum design</li> </ul>		
	Training Service Provider		<ul style="list-style-type: none"> <li>• Provide training delivery</li> </ul>		
	Infrastructure SSC, SCMS (Skill Council for Mining SSC)		<ul style="list-style-type: none"> <li>• Develop model training programs</li> <li>• Identification and certification of Trainers</li> <li>• Identification and certification of assessors</li> <li>• Assessment of trainees</li> <li>• Certification of Trainees</li> </ul>		
Training Delivery	<ul style="list-style-type: none"> <li>• TSP empaneled with DDU GKY or PMKVY program</li> </ul> <p><b>Option 1:</b></p> <ul style="list-style-type: none"> <li>• MMRDA or CIDCO to provide training space for training purpose</li> </ul> <p><b>Option 2:</b></p> <ul style="list-style-type: none"> <li>• Selected ITT's with required infrastructure for training delivery</li> </ul> <p><b>Option 3:</b></p> <ul style="list-style-type: none"> <li>• Construction Contractors and their associations to provide space for training delivery</li> </ul>				

## Work Plan

Tourism	in Months					
	1	2	3	4	5	6
Partnership between MMRDA, CIDCO, Infrastructure and SCMS SSC for development and finalization of the curriculum						

Partnership between Driving schools and Tourism SSC for development and finalization of the curriculum						
Appointment of staff members (instructors, counsellors, mobilization in-charge, placement officers, administrative staff etc.)						
Mobilization of prospective trainees						
Enrolment of students						
Roll-out of training programme						

<b>Project 4: Skill Development Center for Fishing</b>	
Key economic drivers	<ul style="list-style-type: none"> <li>Fishing has good export and domestic consumption potential in Mumbai</li> <li>Renovation of Sasson Dock</li> </ul>
Rationale	<p>The amount that a crew can catch, depends on their skillset. The spotter is the person who spots the fishes in the sea on his own judgement. As of now they don't have a scientific training on this. In addition to this many of fisherman get lost as they are not able to read weather warnings or they unintentionally cross their permissive range in the sea. The course can include basic navigation training, some modules of seaman course, reading the VPS (Vehicle Positioning system) and basic health and hygiene training of how to handle the fishes post-harvest.</p> <p>Also, the traditional fishermen are increasingly finding it difficult to maintain a sustainable income due to variation in catch on a daily basis, particularly the catches are low during non-monsoon season. There has also been an increase in rift between traditional fishermen and deep sea fishermen. Since most of the boats are semi mechanised, the technology orientation to deep sea fishing can help in smooth transition of traditional fisherman to deep sea fishing over a period of time. As per our interaction with the Fishing community members, FSI do have advance ports on which similar trainings can be conducted. The training should include usage of technology for finding fishes, VPS (Vehicle Positioning System) and similar other technologies used for deep sea fishing like trawling, gill netting as well as basic information of state and central marine policy. It should also include boat designing for deep sea fishing, fish biotics and harvesting methods</p> <p>In addition to the problems stated about, fisherman are also facing the problem of not being able to fetch good prices for their produce. Most of the good quality fishes caught by fisherman are bought by suppliers (agents of exporters) at a very cheap rate. Fisherman incurs a substantial loss as s/he does not have expertise on how to export the fish nor they have the proper contacts so that they can bypass the intermediaries. The members of the cooperative should be given the training regarding what are the various rules and regulation in export, what are the various quality parameters they need to meet, what kind of facilities (like cold storage) can be used so that the quality of the fish can be preserved. This will increase the returns to the fisherman on the whole and help the fisherman to walk towards the goal of sustainable means of income.</p> <p>Apart from expanding the marketing capacity of fisherman in terms of export based training, government should also enhance the capacity of fisherwomen. A large portion of the fishes that are caught gets wasted mainly because of lack of proper cooling, both at port level and the boat level. Most of these fishes lose their freshness in a short amount of time on reaching the port. Also, since most of the fishes are sold by fisher women so any loss of fish during handling causes a substantial financial loss for her and her family. It would be quite handy if training regarding fish pickle making or fish wafers can be provided to these women, so that they get additional avenues for income generation</p>

	<p>Maharashtra also has a lot of scope for sports fishing and fish tourism. If promoted properly this can also prove to be good additional source of income for fisherman folk. This program will require a push from the government for marketing , also it would require training of fisherman folks on how to select spots, handle customers, basic hygiene training and keeping the customers engaged by making them try various fishing techniques.</p> <p>In order to ensure that the quality of all these programs are not compromised and all the programs can be delivered under a common roof, a need for skill development center in Fisheries sector is felt. Currently Mumbai has only 1 center as CIFE (Central Institutes of Fisheries Education) which has a limited capacity to train students. The center can have 5 class room and 3 labs and a built up area of 8000 Sq. Ft. also the possibility of building cold storage facilities at dock level should also be explored as it directly benefit the fisherman</p>				
Trainings in high demand	<b>Training courses</b>	<b>Target Beneficiaries</b>	<b>Type of Trainings</b>	<b>Total Number of beneficiaries</b>	
	RPL Training for fishermen and crew members	<ul style="list-style-type: none"> <li>Fisherman and crew members</li> </ul>	Upskilling	1,000 persons in 5 years	
	Deep Sea Fish Training	<ul style="list-style-type: none"> <li>Local fishing community</li> <li>Fish cooperative Members</li> </ul>	Upskilling	1,200 persons in next 5 years	
	Export based training for fisherman cooperative	<ul style="list-style-type: none"> <li>Members of Fisherman cooperatives</li> </ul>	Upskilling	500 persons in next 5 years	
	Sports Fishing and Fish Tourism	<ul style="list-style-type: none"> <li>Members of Fisherman cooperatives</li> </ul>	Upskilling	250 persons in next 5 years	
	Fish Value Added Products	<ul style="list-style-type: none"> <li>Fisherwomen</li> <li>Local Community Members</li> </ul>	Fresh	600 persons in next 5 years	
			Upskilling	1,000 persons in 5 years	
<b>Availability of curriculum</b>	<b>Job Roles</b>	<b>Target Group</b>	<b>QP/NOS</b>	<b>MES</b>	<b>CTS</b>
	<ul style="list-style-type: none"> <li>Sorters, fish handling, spotters (Pagi), Mechanics, fish handlers</li> </ul>	<ul style="list-style-type: none"> <li>Sorters, fish handling, spotters (Pagi), Mechanics, fish handlers</li> </ul>	Fishing Boat Mechanic, Marine Capture Fisherman	Not Available	Not Available
	<ul style="list-style-type: none"> <li>Technician</li> </ul>	<ul style="list-style-type: none"> <li>Local fishing community</li> <li>SHG members</li> <li>Fish cooperative Members</li> </ul>	Not Available	Not Available	Not Available

	• Fish Exporter	• Fish Exporter	Not Available	Not Available	Not Available
	• Fish Value Added Products	• Sea Food Processor	• Fish and Sea Food Processing Technician	• Processing of Fishes and their By-products	Not Available
	• Sports Fishing and Fish Tourism	• Local Fisherman	Not Available	Not Available	Not Available
<b>Investment (INR In lakhs)</b>	<b>RPL Training for fishermen and crew members</b>				
	Operational Expenditure				61
	<b>Deep Sea Fish Training</b>				
	Operational Expenditure				73
	<b>Export based training for fisherman cooperative</b>				
	Operational Expenditure				30
	<b>Fish Value Added Products</b>				
	Operational Expenditure				152
	<b>Fish Sporting</b>				
Operational Expenditure				15	
<b>Total Operational Expenditure</b>				<b>331</b>	
<b>Potential Partners</b>	<b>Partner</b>		<b>Areas of Support</b>		
	Maharashtra State Skill Development Society		• Nodal agency for overall implementation and execution of the program		
	CMFRI, CIFE, CIFT, MPEDA, Maharashtra Chambers of Commerce and Fisherman Cooperatives		<ul style="list-style-type: none"> <li>• Providing Trainers</li> <li>• Providing technical expertise to ASCI, FICSI SSC</li> <li>• Space and infrastructure for establishing training</li> <li>• Practical training</li> <li>• Input for designing curriculum</li> </ul>		
	ASCI ,FICSI		<ul style="list-style-type: none"> <li>• Develop model training programs</li> <li>• Identification and certification of Trainers</li> <li>• Identification and certification of assessors</li> <li>• Assessment of trainees</li> <li>• Certification of Trainees</li> </ul>		
<b>Training Delivery</b>	<b>Option 1:</b> CIFE to provide training infrastructure and deliver training <b>Option 2:</b> NSDC/MSSDS empaneled Training Partners are enrolled for training delivery				

## Work Plan

Fisheries	in Months					
	1	2	3	4	5	6
Upgradation of training centre						

<b>Fisheries</b>	<b>in Months</b>					
Partnership between ASCI , FICSI, MPEDA ,Maharashtra Chambers of Commerce fisherman cooperatives for development and finalization of the curriculum						
Affiliation of Training centre with ASCI						
Initiation of residential facility construction work						
Purchase of consumables						
Appointment of additional staff members						
Mobilization of prospective trainees						
Enrolment of students						
Roll-out of training programme						



## Appendix 1 A.A - Consultations

### Appendix 1 A.A.A - State level consultations- Maharashtra

Sl. No.	Stakeholder	Person	E-Mail	Cell/Phone
1	Maharashtra Tourism Development Corporation (MTDC)	Ms. Swati, GM	gm@maharashtratourism.gov.in	022-22894926/22856743
2	Maharashtra Tourism Development Corporation (MTDC)	Mr. Yogesh Nirgude, Training Officer	stakeholder@maharashtratourism.gov.in	8422822029
3	Department of Fisheries	V V Naik, Joint Commissionaire	vvnaik_stpfish@yahoo.co.in, commfishmaha@gmail.com	9423085654, 022-22821139
4	Maharashtra Tourism Development Corporation (MTDC)	Mr. Sushil Pawar, Manager-Establishments		8422822013
5	Maharashtra Maritime Board	Mr. Atul Patne, CEO	ceommb@gmail.com	022-22612143/22611734
6	Maharashtra Maritime Board	Mr. Gopinath R Thombre, Deputy Collector	grt978@gmail.com	9167884636, 022-22662006
7	Maharashtra Maritime Board	Mr. Jitendra Raisinghani ,Deputy Director- ADB Project	ddcmmb@yahoo.com	9867859888, 022-22655641
8	Maharashtra Maritime Board	Mr. Kiran Vijaykar, Deputy Director (Technical)	kiranvijayakar@gmail.com	9819674903
9	DES	Mr. Ranjeet Singhe, Additional Director	ranajeetso@gmail.com	9561052221, 022-26400053
10	DES	JR Sarnaik	sirjayraj@yahoo.com, jtdiredp.des@maharashtra.gov.in	9220504275
11	Directorate of Technical Education	Mr. Mahendra-Technical Education Officer	Mahendrawagh1988@gmail.com	
12	Maharashtra State Skill Development Society	Ms. Deepti, Programme Officer		+91 22 2216 0210
14	Directorate of Skill Development, Employment and Entrepreneurship	Mr. Navalkar		022-27571944

## Appendix 1 A.A.A - District level consultations- Raigad

Sl. No.	Stakeholder	Person	E-Mail	Cell/Phone
1	Fisheries Deaprtment	Pooja Bhalekar, Officer		99665632793
2	JSW	Parthasarthy Sengupta, President	partha.sengupta@jsw.in	2143-277501
3	Radisson Blu	Vishwas, Manager		2141-227777
4	Dharamtar Port	Jasbir Singh, Vice President	jasbir.singh@jsw.in	2143277501
5	Dighi Port	Vijay Kalantri	vijaykalantri@balaji.co.in	
5	JSW	Pravin Mhatre, HR	pravin.mhatre@jsw.in	2143-277501
6	Federation of CEPTS of Maharashtra	PP Bardeskar, Chairman	mahacetpfed@gmail.com	022-27402658
7	Elppe Chemicals	PP Bardeskar, MD	ppb@elppe.com	2194-263887
8	Caravan Logistics	Sanjeev Gupta, Director	sg@crvn.in	
9	DIC	S. Londe, General Manager		9822879113
10	Panvel Cooperative Industrial Estate	Vijay Lokhande, Chairman	vijay.lokkhande@gmail.com	9819356569
11	Premier Logistics	Manoj Mehera, Director & CEO	mmehera@pglindia.com	98200833336
12	JWC Logistics	Hannah Christian, Vice President	hannah@jwclogic.com	9821355042
13	JWL Logistics	Hannah Christian, Vice President	hannah@jwclogic.com	9821355042
14	Speedy Logistics Park			
15	JNPT	Sanjiv B Pagre, Deputy Manager	sbpagare@jnport.gov.in	9004208005
16	APM Terminals, Gateway Terminals Private Limited	Suhas R. Karandikar, Head Engineering	suhas.karandikar@apmterminals.com	9987561866
17	Taloja Manufacturers' Association	Shyamsundar N. Karkun, Committee Member	tma.taloja@gmail.com	9819484560
18	Government ITI Mahad	M.Patil, Principal	btrimahad@gmail.com	02145-224930
19	Government ITI Alibaug	B R Sharma, Principal	italibag.raigad@yahoo.com	02141-220224
20	U Tropicana	Russel, GM	NA	8390909437
21	CIDCO	P M Nair, Manger (Urban Housing), Retd.	NA	9594521169
22	Industries Department	Vinay Bhangre, Superintendent of Industries	NA	9223258466
23	Oshn Electricals	Kishore Padhnis, Director	NA	9821022154
24	State Bank of India	Vishal Digamnar Jadhav, Branch Manager	sbi.12523@sbi.co.in	9029200602
25	ICICI	Rasmiranjan Mallick, Deputy Manager		8879769719
26	Bombay Marine Engineering & Works Private Limited	Viresh Chhabra, Director	vchhabra@bmew.com	9821417580

27	Tala Properties	Viresh Chhabra, Director	vchhabra@bmew.com	9821417580
28	Forstar Frozen Foods Private Limited	Dilip Parsanis		9870689002
29	BPCL	HD Kadam	kadamhd@bharatpetroleum.in	022-27240835
30	Das OffShore	BM Bhoshale		9821827699
31	JWC Logistics	Hannah Christian, Vice President	hannah@jwclogic.com	9821355042
32	Roha Industries Association	PP Bardeskar, MD	ppb@elppe.com	2194-263887
33	HKS Impex	Vijay Lokhande, Chairman	vijay.lokkhande@gmail.com	9819356569

## Appendix 1 A.A.A - District level consultations- Mumbai

Sl. No.	Stakeholder	Person	E-Mail	Cell/Phone
1	Mumbai Port Trust	Shri Sanjay Bhatia, IAS, Chairman	chairman@mbptmail.com	022-66564011
2	"K" Line Pvt Ltd	Managing Director	mumbai@in.kline.com	
3	Mumbai Port Trust	Mr Bose	tm@mbptmail.com	9820028543
4	Mumbai Port Trust	Mr.AS Thosar,Senior Deputy Traffic Manager	asthosar@yahoo.com	9820006542
5	Mumbai Port Trust	Mr. GS Durve -Senior Assistant Traffic Manager	gsdurve@mbptmail.com	022-66565491/ 9969449950
6	Mumbai Port Trust	Mr. Prashant	idoffice@mdpt.com	022-66565492
7	Shere e Punjab Restaurant	Taranjit Jeet Singh , (Partners)	sherepunjabmumbai@gmail.com	9833370031
8	Marco	Mr. Durai, Vessel Agent	gsdurve@mbptmail.com	9821242673
9	HDFC Bank	Mr. Rohit Raina, Vertical Head for Marketing	Rohit.raina@hdfcbank.com	7498186628
10	Yes Bank	Mr. Sourav Paul, Associate VP (Agri Banking)	saurav.paul@yesbank.in	7738005877
11	Mumbai Port Trust	RA sawant, Assistant Traffic Manager	rabindra0901@gmail.com	66565201, 986947030
12	Sea Green South Hotel	Mahimkare, Receptionist	mail@seagreensouth.com	66566535, 7798259341
13	Dighi Port	Mr. Sushanta Panda , Head of Operations	susanta_panda@balaji.co.in	022-22074824/25
14	DIC	D Y Patil, Joint Director of Industries		
15	NMIS	Captain M.M. Saggi, Director	admin@nmis.net, director@nmis.net, mmsaggi@	022-22024110/ 9769404098
16	DO, Fishries	Mr. Chogule, Assistant Commissionaire Fisheries, Mumbai	acfmumbai51@yahoo.in	8082601085
17	Maharashtra Tourism Development Corporation (MTDC)	Dinesh Kamble	kambledinesh73@gmail.com	842282201
18	Purse seine Fishermen Welfare Association Mumbai Maharashtra.	Mr. Ganesh Nakwa, Chairman,	ganeshnakhawa@gmail.com	9920445732
19	Karanja Fishing Coop society Ltd Sassoon dock, Mumbai	Mr. Ganesh Nakwa, Chairman,	ganeshnakhawa@gmail.com	9920445732

20	DIC	Mrs. S V Magar, Deputy Director, DIC	didicmumbai@gmail.com	24056199, 9892626131
21	BFSI SSC	Mr. Rakesh Bhatt, Head Operations	RAKESH.BHATT@BFSIS SC.Com	2222728121
22	Punjab National Bank	Mr. Sanjay Varshney, AGM,	varshneya@pnb.co.in	9987974479
23	Freight carriers Pvt. Ltd	Mr. Varun, Sales Manager	vms@fcpl.in	9819743161
24	Siraj Sea Foods	Mr. Abdul Aziz,	sirajdosani@gmail.com	9870199983
25	Rizwan Ice and Cold Storage	Mr. Siraj Dosani, MD	sirajdosani@gmail.com	9870199983
26	Mazgaon Machhimar Vividh Karyakari Sahakari	Mr. Siraj Dosani, Chariman	sirajdosani@gmail.com	9820050107
27	Maharashtra Raja Machinmar Fedration	Mr. Siraj Dosani, Member	sirajdosani@gmail.com	9820050107
28	Madura Fashion & Lifestyle	Mr. Vikas gupta, Area Sales Manager (Louie Phillipe)	vikas.g@abfml.adityabirla.com	7026606476
29	Shrikrishna Motor Launch Service (ferry Operator)	Mr. Saurabh S Karmarkar,	ksaurabh1978@gmail.com	9820308864
30	Sea Green Hotel	Mr. Vilas Ovalekar,	mail@seagreenhotel.com	022-66336525, 22822294
31	Hotel Marine Plaza	Mr. Parvez Sheikh, Manager Food & Beverage	fbmanager@hotelmarienez.com	022-22851212, 9892485420
32	JNPT	Mr. Deshpandey , Manager-PPD	nitindeshpande@jnport.gov.in	022-27244158
33	JNPT	Mr. Sanjiv B Pagare	sbpagare@jnport.gov.in	022-27244029
34	APM Terminals (Gateway Terminals India Pvt. Ltd)	Mr. Suhas R Karandikar	suhas.karandikar@apmterminals.com	022-66811009
35	BPCL Terminal (Bharat Petroleum Corporation Ltd.)	Mr. D. Kadam, Manager Operation	kadamhd@bharatpetroleum.in	022-27240835
36	Dbc Port Logistics, CFS	Mr. Rajendra Patil, Dy General Manager- HR	rajendra.patil2@dbclogistics.com	8450971003
37	Keel Logistics	Mr. Sanjay Parekh, MD,	sparekh@keellog.com	9867696489
38	BLR Logististks	Mr. Sanjay Badgamia, Marketing Manager	sanjay.badgamia@blrlogistics.com	9323142490
39	Preety Logistics	Mr. Amit Potdar	amitpotdar99@gmail.com	9820094141
40	VHM Logistics Pvt. Ltd	Mr. Vinod Mahatre	vinod@vhmlogistic.com	7710088901
41	Thakur Infrasprojects Pvt. Ltd	Mr. Dhananjay, Contractor	dhananjaykaruturi@gmail.com	9769409031
42	Baba Tour and Travels			
43	Trust Travels and Tours Pvt. Ltd	Ashish Ujrekar, Senior Tour Executive	tours@trusttravel.in	022-43432283

44	Bharat Mumbai Container Terminals Pvt. Ltd	Mr. Avadhoot Savant, Head HR & Admin	avadhoot.savant@bmetpl.com	022-61273311
45	Mumbai Port Trust	Mr. Keshav, Projects and Planning Division	keshav@mbptmail.com	
46	Mumbai Port Trust	Mr. Kulkarni		9820937267
47	The Taj Mahal Palace	Mr. Hemant Jaiswal	hemant.jaiswal@tajhotels.com	022-66653366
48	Great Indian Holidays	Mr. Rafi Bhat	greatindianholidays@hotmail.com	8454989800
49	Baba Tours and Travels	Mr Swami	saibaba_travels@yahoo.co.in	02222841218, 8976314625
50	Brand Factory, South Bombay	Jssina Desouza,	hr.sobocentral@futurelifestyle.in	9967192950
51	Godrej	Kunal Dhatavkar, Store Manager	nb_wardenroad@godrejnb.com	9820911828
52	Reliance Fresh	Sachin Mallap, Store Manager	sachin.malape@rif.com	8452844544
53	ILFS	Sunil Joseph, Regionl Head	sunil.joseph@ilfsindia.com	9824054964
54	GJSCI	Binit Bhatt	coo@gjsci.org	022-28293940
55	Starbucks	Mr. Pawar	pawarmangesh13@yahoo.com	8108735509
56	ICICI Bank	Ms. Rajni	agarwal.ruchi@icicibank.com	7738161843
57	Naval Maritime Academy	Captain Bala Subramaniam	namac@namacindia.com,	022 22151790
58	Nainas Apparel Pvt. Ltd	Mr. Dhruvin Desai	dhruvin@nainasapparel.com	9819941027
59	Yogayatan Port	Mr. Chandra shekhar, General Manager Architecture and planning	shekhar.danave@yogayatangroup.com	9819824334